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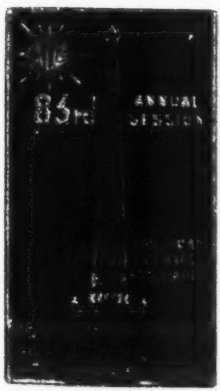

Volume 10 Number 9

SEPTEMBER, 1941

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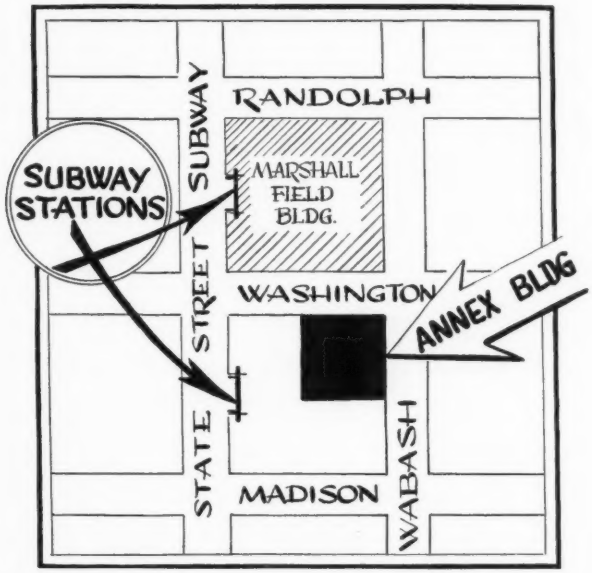

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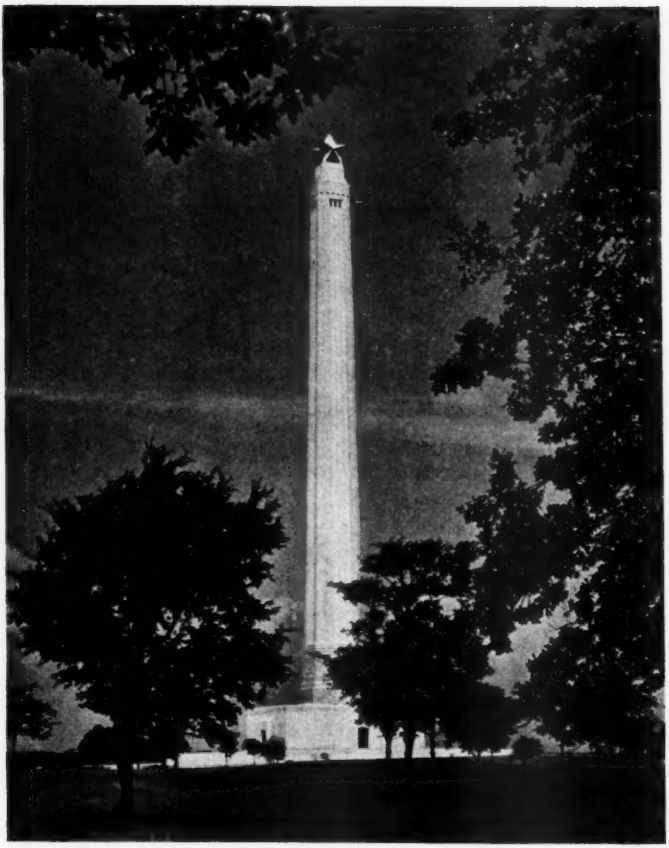

San Jacinto Memorial Tower near Houston, Texas, where American Dental Association meets on October 27-31

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Dental Journal

VOLUME 10 SEPTEMBER, 1941 NUMBER 9

Illinois to Participate in Federal Security Program for Aid to Dependent Children

Illinois is now participating in the federal program of aid to dependent children which is made possible under the Social Security Act. The measures authorizing this participation were passed by the state house of representatives on June 10 and by the state senate on June 25. Governor Dwight H. Green signed the bills on June 30. The law became effective on July 1 and awards will be made after October 1.

Under the Social Security Act which was enacted by the federal government in 1935, certain sums of money are set aside for the use of the states in advancing certain programs of social security. The states receive this money, however, only if they provide certain sums for the same purpose for which the federal money is allotted. It is this legislation which was passed by the state legislature during its last session.

Appropriation

Sixteen million dollars is appropriated for the two years, 1941-1943. One-half of this amount will be paid by the federal government and one-half will come from the general revenue of the state government. The law will be administered by the State Department of Public Welfare through the county departments of public welfare. It is estimated that 70,000 needy children in the state will receive benefits. Approximately 17,000 children are now receiving aid under the Mothers' Pension law, while 53,000 are being cared for by relief funds.

The present cost to the state, counties and townships for the care of these children is $4,000,000 a year. Under the new law, the state will assume this entire expense, and an additional $4,000,000 will be allotted by the federal government.

Provisions of Law

The law[1] provides that a dependent child, as the term is used in the Act, means a needy child under the age of 16, or under the age of 18 if in regular attendance at school, who has been deprived of parental support or care by reason of the death, continued absence from the home, or physical or mental incapacity of the parent and who is living with his father, mother, grandfather, grandmother, brother, sister, stepfather, stepmother, stepbrother, stepsister, uncle

[1]Information taken from the Welfare Bulletin of the Illinois State Department of Public Welfare. 32:1 (June-July) 1941.

or aunt, in a place of residence maintained by one or more of such relatives in his or their own home.

The child to be eligible for aid must have resided in the State for one year immediately preceding the application for such aid; or have been born within the State within one year immediately preceding the application, and his mother must have resided in the State one year immediately before the birth of the child.

Application for aid for a dependent child shall be made by the parent or relative with whom the child resides. The County Department of Public Welfare shall make an investigation and examination of the circumstances of the child, taking into consideration the suitability of the home in relation to the standards of care and health fixed by the laws of the State and by the rules and regulations of the Department of Public Welfare, including the social and educational opportunities of the child and the fostering and protection of its particular religious faith.

Determining Aid

The aid granted for a dependent child shall be determined in accordance with the rules and regulations of the Department of Public Welfare, taking into consideration the child's requirements and the condition existing in the case, the income and resources available to him, from whatever source, and shall grant such aid to the child as shall be sufficient when added to the income and resources available to him, to provide him with a reasonable subsistence compatible with health and well-being.

Names of persons receiving or applying for assistance and records concerning them shall be absolutely confidential except for purposes directly connected with the administration of the Act and shall not be divulged either directly or indirectly for any other purposes.

No public official, agent, or representative in carrying out any of the provisions of the Act, shall take charge of any child over the objection of either the parent of the child or of the person standing in the position of parent to the child, except by court order.

The Mothers' Pension law is repealed. The repeal does not take effect until July 1, 1942.

In the downstate counties the County Superintendent of Public Welfare and the members of the administrative staff will be chosen by the Director of the Department of Public Welfare from registers set up by the Merit System Council on the basis of minimum qualifications and an open competitive examination. Candidates must have been legal residents of Illinois for at least three years.

Dental Program

It is likely that a dental program will be included to meet the needs of the dependent children coming with the scope of the new law. A Dental Advisory Committee has been appointed to aid in working out a dental program. The personnel of the committee follows: Dr. Robert I. Humphrey, chairman, Dr. R. W. McLean (deceased), secretary, Dr. J. C. Heighway, Dr. M. M. Lumbattis, Dr. C. P. Danreiter, Dr. W. L. King, Dr. B. C. Ross, the president of the Illinois State Dental Society, ex officio, and Dr. C. F. Deatherage, ex officio, State Department of Public Health. This committee also functions as the Dental Advisory Committee to the Division of Old Age Assistance in the development of dental programs.

The committee has been at work in preparing a state-wide plan under which certain types of dental care may be rendered to those coming under the Division of Old Age Assistance. This plan is being developed in consultation with representatives of the Illinois State Dental Society in the various counties and when completed will be put into operation by the Division of Old Age Assistance.

The Efficiency of Non-Buffered Local Anesthetic Solutions

By Russell G. Boothe, D.D.S., M.S.D., Chicago

In 1912 Gros observed more rapid and more profound anesthesia with the use of procaine borate. He also found the addition of sodium bicarbonate in a .7 per cent sodium chloride solution to procaine hydrochloride greatly reduced the time required for anesthesia to appear. His work was done on the sciatic nerves of frogs.

In 1924 Regnier found that additions of small amounts of sodium hydroxide definitely increased the anesthetic action of cocaine hydrochloride. His conclusions were that the action of the alkalinization was distinctly marked by a more rapid anesthesia, a greater rapidity of absorption of the anesthetic, and by a lesser degree of anesthetic failures. His work was done on the cornea of rabbits.

Efficiency

Fosdick, Hansen and Dragstedt* found in their work on goldfish, when they compared the efficiency of procaine borate and procaine hydrochloride solutions at varying hydrogen-ion concentrations, that the anesthetic efficiency was in proportion to the rise in pH of the anesthetic solutions.

Freeman and Benedict in 1929 reported that procaine borate was much more rapid in action than procaine hydrochloride, the reason apparently being due to the higher pH of procaine borate, which is 8.3. Now by the addition of an alkali to the procaine hydrochloride and raising the pH to 7.4, "which is approximately that of human blood," a marked increase in efficiency was noted.

This clinical study was made at the Oral Surgery Clinic of Northwestern University Dental School.

Acknowledgment by the author of aid and advice is made to Drs. Stanley W. Clark, George B. Denton, Leonard Fosdick, Paul Salisbury and Carl O. Schramm.

*Lack of space prevents publication of bibliography which may be consulted in author's original article.

Freeman states that inasmuch as the pH of the human blood is approximately 7.4, an anesthetic solution of the same pH should give better results, and that a solution conforming as nearly as possible to the alkalinity of the normal blood should cause the least possible local tissue disturbance. He found that the anesthetic solutions with a pH corresponding to the blood showed a markedly more rapid onset than the usual acid solution, the lessened time being from one-half to one-third, although the most rapid solution was one with a pH of 8.2.

Harvey, Deford and Eller found in their work that alkalinity of the anesthetic solution increases the efficiency by altering the coefficient of partition, so that there is a greater tendency for the drug to pass out of a watery solution into the sheath of the nerve fibril. They state that there was a more rapid onset, and a more profound anesthesia with the alkaline solution approaching the hydrogen-ion concentration of the blood than with the ordinary acid solutions, and that it produced a better mental attitude in their patients. In their hands the most satisfactory anesthesia was obtained with the anesthetic solution having a pH of 7.1.

Average Time

Heine reports the average time of a mandibular injection using the ordinary acid procaine solution was 10 minutes; the addition of sufficient alkali to adjust the pH of the solution to equal the blood reduced the time to 4 minutes. He says there was practically no after-pain with the alkaline solution and that the high alkaline solution became oxidized

and discolored within an hour after preparation and should not be used after this time.

Gwinn and Ferber reported a more rapid onset of profound anesthesia with an alkaline solution approaching the hydrogen-ion concentration of the blood than with the ordinary acid solution.

Wilson, McDonald and Bullock state that when a solution acts rapidly there is usually no pain experienced by the patient, which is almost always the case in an alkaline solution. They found the duration of the alkaline solution less than that of the acid solution, but believe that a decided advantage and prolonged anesthesia is probably an evil in that it is an unnecessary anxiety to the nervous patient.

Numerous average induction times for mandibular injection of the regular two per cent procaine hydrochloride solution are found in the literature. They are as follows:

Breslin	15-20 Minutes
Smith	15-20 Minutes
Fischer and Riethmuller	12-20 Minutes
Heine	10 Minutes
Williamson, Dalby, Ellison	10 Minutes
Nevin and Puterbaugh	5-10 Minutes
Posner	5 Minutes
Clark, Freeman and Benedict	2 Minutes

(Addition of alkali to raise pH to 8 or above.)

In reviewing the literature, it was found that few writers mention the duration of mandibular anesthesia for various solutions.

Alkaline Solutions

Levy found that a 2 per cent procaine hydrochloride solution, dissolved in distilled water that had a pH 5.3, had a duration as long as two hours and fifteen minutes.

Fischer believes that long duration of anesthesia for dental purposes is a decided disadvantage. He contends that the value of an alkaline solution lies in the fact that it allows a normally smooth metabolism in the region of the infiltrated tissue and reduces ischemia of the pulp to a minimum.

Clark states that alkaline local anesthetic solution represents a most marked improvement in regard to efficiency, toxicity and post-injection sequelae, over the commonly used acid local anesthetic solution. He says that the duration of anesthesia is only about three-quarters that of the acid solution, but this is of no practical disadvantage because in mandibular injections, the duration of anesthesia will extend to 50 minutes or more, which should be sufficient time for any uneventful operation. He says that alkaline solutions have been demonstrated to be less than one-half as toxic as acid solutions. The stability of a freshly prepared alkaline local anesthetic solution is between one and two hours.

Harvey, Deford and Eller recognized that acidity of a procaine solution may be responsible for the sensation of fullness, swelling, and tension, often experienced in infiltration anesthesia. In their work they found that the alkaline solutions with a pH approximating that of the blood lessened the incidence of postoperative sequelae.

Schuchard and Williamson, Dalby and Ellison reported that in using the alkaline solutions there were much less toxic effects to the patient, with no post-injection disturbances.

Complications

Benedict, Clark and Freeman state that unfavorable clinical manifestations were much less frequently encountered when the alkaline solutions were used than when the acid solutions were used. Local edema, delayed healing, pain, and sloughing are the conditions which often serve to complicate the clinical picture where acid solutions with a low pH are employed. Aside from the fact that the duration of anesthesia is shorter, only one disadvantage of the alkaline solution has been observed—the lack of stability of the solution, especially when epinephrin is added—a fact which renders it necessary to make the solution fresh for each patient.

Fischer found that even when an alkaline solution was injected into an inflamed mucous membrane, it had an influence on the cell metabolism by counteracting acidity of the tissue, and therefore did not interfere with the healing process of the wound.

Borg reports in his study of the effect of procaine-epinephrine solution on the pulse rate that there was no consistent change in pulse rate following the administration of the anesthetic solution. It seems reasonable to assume that many of the variable changes observed were due to other conditions, such as psychic reactions and the tension of the patient, rather than to the small amounts of drug administered. Frequently it was found that the pulse rate had increased from ten to twenty beats per minute as soon as the patient was aware of an impending extraction and before any solution was injected. In his experiment, he used a 2 per cent procaine hydrochloride solution with epinephrine in a dilution of 1 :50,000.

Swelling

Breslin states the sensation of swelling and fullness is pronounced as the pH drops and the post-injection pain is proportional to the increased acidity of the solution.

Hamilton in his work found that the pH had little effect upon the clinical results obtained. The pH of his solutions were 5.3 and 7.

Tainter, Throndson and Moore state that when using the neutral buffered and acid unbuffered local anesthetic solutions of procaine hydrochloride, they found practically no differences between the two solutions which would indicate a probable advantage of one over the other. There was no definite difference in the number of cases in which complete anesthesia was secured, nor in the cases in which the injection of the anesthetic solution caused pain. Postoperative observations showed no significant difference in favor of the buffered solutions. The record of both solutions indicated complete satisfaction in 91% of the cases when the acid unbuffered solution was used, and only 81% of those injected with the neutral buffered solution.

Schneider verified the results of most men in their investigations in that as the pH of the solution is raised, the induction period is shortened. Duration was longer for the acid solutions than for the alkaline. He also observed that the alkaline solutions were less stable than the acid solutions and showed signs of breaking down in two hours, that more cases of the subjective symptoms were noted in the acid group, and that healing was more apparent in twenty-four to forty-eight hours with the alkaline solutions.

Anesthetic Efficiency

In view of the conflicting results of the previous investigations concerning the effect of the pH of anesthetic solutions on anesthetic efficiency, it was thought desirable to accumulate additional information along these lines.

Methods and Materials

The subjects for this work were 300 patients who came to the clinic for minor surgical operations, such as extractions, impactions, alveolectomies, and surgical removal of roots. All of the cases selected were those requiring mandibular injections, since they were best suited for a more accurate and a less variable test for the induction time of anesthesia. Most of the injections were made by the author under the supervision of the oral surgery staff.

The Luer all-glass five cubic centimeter syringe was used with the $1\frac{1}{4}$ inch, 25-gauge steel slip-on needle for the mandibular injections.

The anesthetic solution was used by the author without any information as to its identity. The observations were all made by the investigator, and therefore all the results were comparable, as

differences in individual judgment were eliminated.

A 2 per cent solution of procaine hydrochloride, with epinephrine 1 :50,000, was freshly prepared each day shortly before it was used. Thirty-six different solutions were used in the investigation. These started at pH 4.25 and, varying at different tenths, ranged as high as 7.6. In assembling this work, it was decided to group these solutions in seven different classes, starting with pH 4.5 and continuing in intervals of five-tenths, thus resulting in seven different groups. The hydrogen-ion concentration of these solutions are pH 4.5, pH 5, pH 5.5, pH 6, pH 6.5, pH 7, and pH 7.5.

Two cubic centimeters of the solution was used for each mandibular injection. The injection time was exactly two minutes from the time the needle was inserted until the needle was withdrawn; it was timed by a stop-watch.

The onset time of each injection was measured from the time of removal of the needle until the manifestation of the tingling of the lower lip. The induction time of anesthesia was figured as the time which elapsed from withdrawal of the needle to the disappearance of painful sensation upon pressure of a steel probe against the root and peridental membrane. As soon as the lip signs were noticed, the field was tested immediately and then every thirty seconds thereafter until the surgical stage was reached.

The efficiency of the anesthetic was determined at the time of the operation by questioning the patient. If the patient experienced no pain at the time of operation, the efficiency was recorded as profound. However, if the patient experienced a little pain, it was considered fair. But if a great deal of pain was experienced by the patient, the injection was called a failure.

Hemorrhage

The amount of hemorrhage was noted at each operation and recorded as subnormal, normal or slightly more than normal. A sub-normal hemorrhage was recorded if the socket had not filled with blood at the time of dismissal; normal if some bleeding took place and a clot was established at or before the time of dismissal; and slightly more than normal, if bleeding was present at the time of returning sensation, when pain was felt upon application of pressure with the steel probe in and about the socket or in whatever region the operation was performed.

The pulse rates were taken before the injection, 3 minutes after the injection, and 15 minutes after injection. The pulse rates were recorded at the 3 and 15 minute intervals even though the operation had not been completed.

The patients were given a second appointment after the operation in order to afford an opportunity to examine the after-effects of the injection and operation. In those cases where the patient returned as directed, the tissues were examined and recordings were made as to soreness, or swelling at the site of injection, inflammation of the tissues, painful alveoli, or uneventful healing.

An individual case history chart was used to record the history and clinical data for each patient.

Comment

In the discussion of the results in this investigation, the anesthetic solution will be dealt with from the standpoint of hydrogen-ion concentration, duration of anesthesia, efficiency, subjective symptoms, observations on hemorrhage, pulse rates, post-injection results and post-operative results.

Only mandibular injections were used, in order to reduce the number of variable factors that might arise with other injections.

Regardless of how careful one may be in this type of experimental work, there are conditions beyond the control of the investigator that have a definite bearing on the accuracy of the findings. Inaccurate placement of the anesthetic

solution is probably the most important of the variables in this study; consequently the more accurately the injections are made, the more constant will be the induction and duration periods. Likewise, one must also depend to a large extent upon the symptoms described by the patient, as well as the latter's reaction to certain clinical tests for much of the information regarding the amount of pain experienced. This opens up a wide range of opportunities for factors other than the anesthetic solution to influence the final results. Therefore, all those possible mentioned factors must be kept in mind in interpreting the results obtained.

Induction Time: It was observed, when reviewing the literature, that frequent references to long induction periods were found. Unfortunately, the hydrogen-ion concentrations of these solutions were not given, and there were insufficient experimental data presented to substantiate definitely the statements concerning length of induction time.

Average

Table 1 shows the average induction time for the various solutions. The solutions were divided into seven different groups according to their hydrogen-ion concentration, each group having a pH range of 0.5. This arrangement was necessary because of the many different solutions studied.

A comparison of the acid and alkaline groups in *Table 1* shows the average induction time for the acid groups to be longer than the alkaline groups. The longest induction time (10 minutes and 30 seconds) was with the acid solutions (pH 5), with an arithmean induction time of 4 minutes and 18 seconds, while the alkaline solution (pH 7.5) had as its longest induction time 5 minutes, and an arithmean time of 2 minutes and 30 seconds. The median induction times for the acid and alkaline solutions were slightly less than the arithmetic means although practically comparable. With the alkaline solutions the longest induction times were noted when the solution began to break down, which ordinarily would be after two hours. Thus it will be seen that the induction times usually decreased as the hydrogen-ion concentration was increased.

Table 1. Induction Time for Mandibular Injection in Minutes and Seconds

pH of Solution	Number of Cases	Shortest Time	Longest Time	Arithmean Time	Median
4.5	26	2′ 30″	7′	4′	3′ 45″
5	104	2′ 30″	10′ 30″	4′ 18″	4′
5.5	46	2′	8′	4′	3′
6	14	1′ 30″	4′ 30″	3′	3′
6.5	41	1′ 30″	8′	3′	3′
7	14	1′	4′	2′ 30″	2′ 30″
7.5	54	30″	5′	2′ 30″	2′

Duration Time: It is not an easy thing to induce a patient to remain after the operation has been completed; consequently, it was rather difficult to obtain accurate data on the duration of the anesthesia. When the patient was allowed to go home before sensation returned, it was found that his report of the duration of anesthesia was usually longer than that ascertained from a patient in the same pH group who had been detained.

Anesthesia was more prolonged in the strong acid groups and shortest in the alkaline solutions. The average dura-

Table 2. Duration for All Cases in Hours and Minutes

pH of Solution	Number of Cases	Shortest Time	Longest Time	Average Time
4.5	26	1:15	2:15	1:50
5	104	1:15	2:20	1:46
5.5	46	1:13	2:10	1:32
6	14	1:10	2:10	1:30
6.5	41	1:10	2:15	1:33
7	14	50′	1:20	1:18
7.5	54	50′	1:49	1:19

tion for the pH 4.5 group was 1 hour and 45 minutes, while that for the pH group 7.5 was 1 hour and 14 minutes.

Efficiency: It was noted in *Table 3* that in the pH group 5.5 profound anesthesia was produced in 95 per cent of the 46 cases, while in the pH group of 7, profound anesthesia was produced in 93 per cent of the cases.

Table 3. Efficiency of Solution

pH of Solution	No. of Cases	Profound	Fair	Failure	(Profound)	(Fair)
4.5	26	24	2	0	92.3%	8.7%
5	104	95	9	0	91%	9%
5.5	46	44	2	0	95%	5%
6	14	12	2	0	86%	14%
6.5	41	36	5	0	88%	12%
7	14	13	1	0	93%	7%
7.5	54	45	9	0	84%	16%

In summarizing the efficiency of the alkaline and acid groups, profound anesthesia was produced in 91 per cent of cases in the acid groups, while in the alkaline groups in 85 per cent of the cases, profound anesthesia was produced. The small difference in percentage indicates that the efficiency was not governed by the hydrogen-ion concentration.

Epinephrine

Observation of Hemorrhage: Epinephrine in a concentration of 1:50,000 was used as a vaso-constrictor in all the solutions employed in this study. There was not a great deal of difference in the degree of hemorrhage in the various pH groups. The pH group 7 shows in its 14 cases, no sub-normal hemorrhage and 14 per cent slightly more than normal hemorrhage, while pH group 6 shows in its 14 cases, no cases falling in the sub-normal or slightly more than normal column.

In the summary of the acid and alkaline groups, the acid group shows 97 per cent normal, and the alkaline group 83 per cent normal.

Pulse Rate Changes: The pulse rates increased during the first 3 minutes after injection over the pulse rates taken before injection, in the majority of cases; and decreased below the pulse rate taken before injection during the next 15 minutes in the majority of cases. In this respect, the only substantial difference between solutions of high pH and low pH was that more of the cases in the low pH groups showed a decrease in the 15 minute interval. No significance is attached to this difference.

Symptoms

Subjective Symptoms: Table 4 shows the frequency of subjective symptoms, such as tremors, pallor, fainting, perspiration, respiration, and nervousness in the various pH groups.

Table 4. Subjective Symptoms

pH of Solution	Number of Cases	Normal Cases	Pallor Cases	Tremor Cases	Fainting Cases	Perspiration Cases	Nervous Cases	Respiration Cases
4.5	26	24	1	1	0	2	2	2
5	104	94	6	8	2	9	10	10
5.5	46	43	1	2	0	1	3	2
6	14	12	0	0	0	1	2	0
6.5	41	39	0	1	0	1	2	2
7	14	13	0	0	0	1	1	1
7.5	54	48	3	4	1	6	6	3

Fainting was recorded whenever the condition of the patient was so that the head had to be lowered to prevent complete fainting. There were 3 cases of fainting, 2 in the pH group of 5, and 1 in the pH group of 7.5. A more advanced degree of nervousness is probably represented by tremors.

The hydrogen-ion concentration does not seem to produce a great degree of difference in the incidence of subjective symptoms, such as perspiration, pallor, nervousness, and increased respiration.

Post-Injection and Postoperative Results: Although it was difficult and rather inconvenient for a good many patients to return to the clinic for observation after the operations, 77 per cent returned in 48 hours. This gave opportunity to observe the after-effects of the injection as well as the condition of the tissues at the site of operation. The writer attempted to determine the irritating effects of the anesthetic solution by the incidence of local pain and swelling after the operations.

These patients were questioned as to whether they experienced any pain or other reaction following the return of sensation at the site of injection and the site of operation. Examination was made of the tissues at both site of injection and site of operation for soreness, swelling and inflammation.

Of the cases reported upon, 15 complained of a slight pain at the time of injection. Fourteen of these 15 cases occurred in pH groups 4.5 to 6.5, while 1 occurred in pH group 7.

Of patients returning in 48 hours, 7 complained of pain at the site of injection. All of these instances occurred when solutions in pH group 4.5 to 6.5 were used. Pain in these cases was not severe and lasted only a few hours.

Swelling

There were only 3 cases of slight swelling at the site of injection after 48 hours, and all 3 of these were in the pH group of 4.5 to 5.

Painful alveoli (dry sockets) resulted in 8 cases out of the 300 cases. Seven of these occurred in the pH groups from 4.5 to 6.5 and 1 in the pH group 7 to 7.5. In the author's opinion, it was very difficult to determine whether this condition was caused by the anesthetic solution, trauma, or other factors.

Forty-four of the patients returning in pH group 7.5 showed that in 88 per cent, the tissues appeared in good condition. The next highest was in pH group 6.5, which was 74 per cent normal; the lowest per cent was the pH group of 4.5, which was 47.3 per cent. Judged from this the incidence of after-pain at the site of operation is probably greater with the acid solutions than with the alkaline solutions.

Conclusions

1. The alkaline solutions are more rapid in onset than the acid solutions, and as the pH of the solution is raised, the induction period is shortened.

2. Duration of anesthesia was longer for the acid solutions than for the alkaline solutions, but the duration of surgical anesthesia of the alkaline solutions was sufficient for most dental operations.

3. There was no differential clinical significance between the acid and alkaline solutions.

4. There was slightly greater incidence of slightly abnormal hemorrhage noted in the alkaline groups than in the acid groups, but the slight difference probably carried no significance.

5. The hydrogen-ion concentration of the anesthetic solutions showed no important effect in the pulse rate change.

6. The acid and alkaline groups gave no noticeable differences in the incidence of perspiration, pallor, fainting, nervousness, and increased respiration.

7. The incidence of postoperative conditions at the site of injection, and pain at site of injection, were less frequent with the alkaline solutions than with the acid solutions.

8. The alkaline solutions showed the tissues at the site of operation to have much less soreness and much less pain in 48 hours than did the acid solutions, a fact which has a definite clinical significance.

9. The alkaline solutions were less stable than the acid solutions and showed signs of breaking down in from one and one-half to two hours.

The Role of the Dental Hygienist

By Margaret Clark Miller, D.H.

There are 5,861 registered dental hygienists in the United States and there is a growing sentiment that the hygienist could form an integral part of state dental health programs if she were allowed to do educational work in various institutions. With a shorter period of training in a restricted field, the dental hygienist can better afford to devote her services to many of the tasks that are involved in a program of dental health education. The country as a whole needs trained personnel and the hygienist may supply the answer to this problem in the field of dentistry whether she is in a dental office or in institutional work. In both fields she comes into close contact with a large number of people needing education in oral hygiene. While the hygienist is a specially trained worker in the field of dental health education, she is also able to render additional aid through valuable dental prophylactic service.

Supervision

The status of the hygienist in the various states and Hawaii is graphically demonstrated in the table on page 353.

The dental hygienist must work under the direct supervision of a licensed dentist at all times. She must pass state board examinations and be licensed to practice in the state in which she is employed. The hygienist can work as such only in states which recognize her standing through legislation. At the present time thirty-four states grant such recognition and Illinois is the only leading state in dental education that does not license the dental hygienist.

A recent survey shows that the largest percentage of dental hygienists practice in private offices and that the second largest number are engaged in public health work. In the latter field, the duties of the hygienist vary. In some instances the hygienist is almost entirely a technical worker while in others she may devote the major portion of her time to work of an educational nature. In school and county health work the hygienist is usually assigned to a relatively large area which makes it necessary for her to travel from place to place.

Dental Office

In the largest field of activity for hygienists—the dental office, the hygienist can be of value in carrying out educational work and in providing periodic prophylactic services under the direct supervision of the dentist. She can also be of aid to the dentist in such operations as the recording of cavities, the instruction of the patient in mouth care, the conduct of a recall system, and the provision of information on diet. In addition she can assist the dentist at the chair, take charge of various phases of laboratory work and handle the details of the business office. Thus, with the aid of a trained and skilled worker, the dentist is free to carry on the other problems involved in dental practice.

The dental hygienist also has a place in other fields of dentistry. She may, for example, be employed in large hospitals or sanatoriums where her duties are similar to those in a private office. She may be called upon to do bedside prophylaxis and to assist in giving anesthetics in the dental department. There are also many large industrial and commercial enterprises which have dental clinics maintained by a staff of dentists and hygienists. Here the routine work of the hygienist is again similar to that in a private office. On occasion she carries on educational work through motion pictures and lectures to large groups of employees.

STATUS OF DENTAL HYGIENISTS[1]

State	Number Licensed	Office	Hospitals[2]	Clinics	Schools	Health Depts.	Teaching in Training Schools
Alabama	65	16					
Arkansas	12	8					
California	240	130	10	4	45	20	2
Colorado	12	11			1		
Connecticut	513	231	9	5	51	6	3
Delaware	18	8			1	9	
Dist. of Col.	76	19	3	1	6		
Florida	61	50				2	
Georgia	142	70	1		1		
Iowa	60	16	1		2	1	
Kansas	36	35					
Louisiana	8	4				1	
Maine	78	11			4	3	
Massachusetts	377	297	13	4	46	1	5
Michigan	218	36	7		12		1
Minnesota	362	60	7		14		1
Mississippi	18		1			14	
Montana	55	25					
New Hampshire	37	13				3	
North Carolina							
New York	1599				311	1	17
Ohio	180	36	1	2	9	5	
Oklahoma	26	5	2			2	
Pennsylvania	838					8	4
Rhode Island	52	17	1			1	
South Carolina	24				1	1	
South Dakota	14	14					
Tennessee	55	40				6	
Vermont	22	10	1	1			
Washington	99	37				1	
West Virginia	54	18	1		4		2
Wisconsin	349	175	1	2	18		1
Wyoming	5	2					1
Hawaii	56	3			29		
TOTALS	5761	1397	59	19	555	85	37

[1]For year 1940 from information compiled by the American Dental Hygienists' Association.
[2]*Civil Service positions:* U. S. Marine hospitals in New York, Texas, New Mexico, Alabama, New Jersey, California, Georgia; *Army hospitals:* District of Columbia (2); California (1); *Veterans' Administration:* District of Columbia (1); Neuropsychiatric hospitals, (20).

The federal government employs dental hygienists in such departments as the Army, the United States Public Health Service, and the Veterans' Bureau. At the present time dental hygienists are being placed in all of the major defense hospitals and recently a call was issued for more hygienists to register for these positions through the Civil Service. The Red Cross also utilizes the dental hygienist in various positions.

In order to be competent in the fields that have been mentioned, the dental hygienist must complete a curriculum which covers approximately sixty subjects. There are now seventeen training schools for hygienists in the United States and the average training period for the student hygienist is two years. During this time the student is required to do actual work in various divisions of the dental school such as the surgery and radiology departments. The student is also trained in assisting at the chair and in doing such technical work in the laboratory as pouring up models and casting inlays.

In learning the technique of prophylaxis the student hygienist must spend from 125-140 hours in manikin practice before she is allowed to work on patients. An additional two hundred hours must be spent in doing prophylactic work on patients before she is allowed to graduate.

The average dental hygienist adapts herself readily to any of the various fields open to her and has demonstrated her value in the states in which she is licensed. There is no question but that the hygienist has a definite role of assisting the dentist in the many fields of practice and education that now seek increased attention.

The Diameter of Dentinal Tubuli

By Eduard Georg Friedrich, Lieut. DC-V(S) USNR*

Quotations from several texts on dental histology concerning the diameter of dentinal tubuli show a relatively wide range of observations. Charles F. Bödecker, F. B. Noyes, and Meyer (Port Euler) give 2 microns; Theo. B. Beust, 2.5; Rudolph Kronfeld, 2-3; F. B. Noyes and Isaac Schour, 3-4; while Josef Schaffer records the largest diameters of 4-6 microns. The question arises, after an examination of these figures, which of these observers has given the most accurate picture of the diameter of dentinal tubuli. In an effort to answer this question, the work outlined in this report was undertaken.

The tables accompanying this report

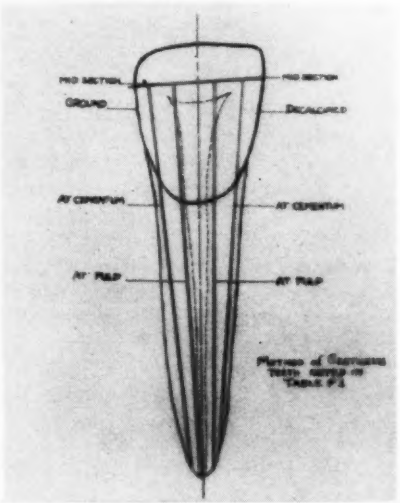

Figure 1. Diagram of method of sectioning teeth as noted in Table 1.

Research conducted at Northwestern University, School of Dentistry.

*In compliance with Article 113(2) U.S. Navy Reg. The opinions and assertions contained in this paper are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

Table 1

Measurements of ground and decalcified sections of the same teeth, to show variation in the diameter due to the difference in preparation.

Ground Sections			Decalcified Sections		
Pulp	Midway	Cementum	Pulp	Midway	Cementum
2.5	2.3	2.0	1.9	1.4	1.6
3.1	2.9	2.5	2.9	2.5	2.2
2.6	2.3	2.1	2.4	2.0	2.3
2.8	2.6	2.2	2.5	2.4	2.5

Note: The individual figures noted in this and other tables are not the measurements of a single tubule, but are the average of the ten measurements made in each representative field.

were prepared from the observations made on sections of four teeth which were divided to permit the preparation of ground and decalcified sections of similar areas of the same tooth. The results of these measurements are noted in *Table 1*. Measurements were also made on ground and decalcified sections taken at random from the files. These are noted in *Table 2*.

The teeth mentioned in *Table 1* were recently extracted teeth that had been fixed in 10 per cent formalin. They were then sawed into two pieces along their long axis. One-half was ground and the other decalcified, sections in each case being made according to the diagram and the resultant observations noted for comparison.

From the selected group of four teeth it was found that the measurements of tubuli in ground sections were slightly larger than those of the decalcified sections. *(Table 1.)* This difference is not borne out, however, in the averages for the ground and decalcified sections taken at random. *(Table 2.)*

Smaller

Consideration of the above table will show that the tendency toward a di-

Table 2

Measurements of ground and decalcified sections taken at random.

Ground Sections			Decalcified Sections		
Pulp	Midway	Cementum	Pulp	Midway	Cementum
2.4	1.9	1.5	2.6	2.2	2.7
1.5	.9	1.5	2.2	2.1	2.7
2.0	1.7	1.4	2.2	2.3	1.5
1.9	1.3	1.3	1.9	1.4	1.6
2.2	2.0	1.8	2.5	2.0	1.9
1.8	1.8	1.7	3.0	2.1	1.2
2.0	2.1	1.9	1.8	1.4	1.1
1.9	1.5	1.7	2.5	2.2	2.0
1.5	1.4	1.6	1.9	1.4	1.5
2.1	2.1	2.1	2.2	2.3	2.0
1.6	1.5	1.5	2.8	2.5	2.2
2.4	2.0	2.0	2.1	2.2	2.0
1.9	1.5	1.5	2.0	1.8	1.0
2.5	2.3	2.0	2.5	2.3	2.0
2.8	2.4	2.2	2.6	2.4	2.1
Averages 2.1	1.8	1.7	2.4	2.0	1.8

Table 3

Summation of measurements in Tables 1 and 2

Greatest Average Diameters			Lease Average Diameters	
Pulp	2.8		Pulp	1.5
Midway	2.4	Ground Sections	Midway	0.9
Cementum	2.2		Cementum	1.3
Pulp	3.0		Pulp	1.8
Midway	2.5	Decalcified Sections	Midway	1.4
Cementum	2.7		Cementum	1.0

ameter smaller at the cementum than at the pulp is fairly constant, but this does not approach the regularity of an arithmetic progression. Since these figures are compiled by examination of random sections of all ages, one cannot make comparison between the ground sections and the decalcified sections as to relative diameter and draw any sound conclusion therefrom because of the variable factors involved.

Constant

In the selected cases, however, all factors save the method of preparation have been kept constant, and we are able, therefore, to state with some conviction that the decalcified sections show the diameter of the tubuli to be smaller than those of the ground sections in the same tooth. This is attributed to the tendency on the part of the specimen to gather itself during decalcification, thereby compressing the tubuli.

On the basis of these measurements and observations the following conclusions may be drawn.

Conclusions

1. The width of dentinal tubuli varies along the entire length of the tubule; that is to say, tubuli vary in diameter at any point between the cementum and the pulp at which the observation is made, the diameter increasing as the pulp is approached. Also the diameter of all tubuli may vary at the same level.

2. The average diameters are the same in all teeth and do not vary from anterior to posterior.

3. The tubuli of decalcified sections are smaller by .2-.4 microns than those of ground sections taken from the same tooth.

Accurate

4. In general these observations indicate that those of other investigators are fairly accurate. The great variation in diameter and general averages is not justified in the light of these observations. There seems to have been a tendency toward the selection of the larger diameters by some of the authors cited.

5. There were no tubuli observed in any of the sections under consideration that would justify an average diameter greater than 3 microns.

Missing Teeth:—The Finnish scientist, J. Kivimäki, presents a theory, based on a study of the roots of teeth, that the third molars, the upper central incisors, and possibly the second bicuspids will be the first teeth to disappear from the human denture. A survey of individual tooth germs in the mouths of ten thousand Swiss children, reported in 1936, shows that the lower second bicuspid was the tooth most frequently absent, then the upper second bicuspid, and the upper lateral incisor. A study made during 1935-1937 at the University of Pennsylvania dental clinic, however, revealed that far more upper lateral incisors were missing than any other teeth except third molars, the lower and the upper bicuspids coming next in order of absence. There may possibly be local or racial differences in this respect. — Brekhus, Peter J. Your Teeth: Their Past, Present and Probable Future. Minneapolis: University of Minnesota Press. 1941.

A.D.A. Approves Program for Rehabilitation At Special Meeting of Board of Trustees

A program through which those disqualified because of dental defects under the Selective Service Act could become eligible for military service was approved by the Board of Trustees of the American Dental Association which met in special session in Chicago on August 3. The program was formulated by a committee composed of members of various American Dental Association committees and representatives of various government agencies. Among the committees and groups represented were: the Dental Preparedness Committee, the National Health Program Committee, the Economics Committee, the Legislative Committee and the Bureau of Public Relations of the American Dental Association; the Dental Advisory Committee to Selective Service, the subcommittee on dentistry of the Health and Medical Committee and the Selective Service System.

The rehabilitation program approved by the Board of Trustees recognizes that dental care to make men available for military service could be provided at a variety of levels. This means that individuals, families, communities, states and volunteer agencies could all provide dental service in a rehabilitation program under their own initiative. It is also recognized that such a program would not quickly reach the objective of fitting men for active military service because of lack of funds and for other reasons.

As the most effective method of rehabilitation, the A.D.A. program recommends that men be inducted into the armed forces on a provisional basis through adjustment of dental standards and that corrective dental services be performed by the dentists of the armed forces.

In the event that the Congress of the United States considers legislation for rehabilitation, as proposed in the report of the Commission on Physical Rehabilitation[1] the A.D.A. program provides specifications for the participation of the dentist on the local, state and federal levels.

The full text of the program adopted by the American Dental Association follows:

PROGRAM FOR REHABILITATION OF REGISTRANTS REJECTED FOR DENTAL DEFECTS UNDER THE SELECTIVE SERVICE ACT

The American Dental Association recognizes that the dental rehabilitation of registrants found dentally deficient under the Selective Service Act, can be accomplished in a variety of ways.

The American Dental Association recognizes that a contribution to the national welfare can be made by the provision of funds for dental rehabilitation, under the initiative of states, communities and volunteer agencies.

The American Dental Association further recognizes that such a program would not produce the most effective results in making manpower available for military service.

The American Dental Association, therefore, recommends as the most effective program one in which dentally deficient registrants are provisionally inducted into the armed forces and then provided with the needed service by the dental personnel of the armed forces.

In the event that the Congress considers legislation providing funds for a program of dental rehabilitation, the American Dental Association recommends that the following plan form the basis of such legislation:

1. Selective Service form #200 and War Department form #211, AGO, would be amended so that: (a) the examining dentist could state whether or not the dental defects, in his opinion, were remediable; (b) registrants whose defects were remediable could be placed in special classifications to indicate the correctability of the defects; (c) registrants thus classified could signify their willingness to undergo corrective dental procedures, could permit the release of information pertinent to their remediable

[1] Report of Commission on Physical Rehabilitation. Ill. D. J. 10:296 (Aug.) 1941.

defects, would indicate whether or not they would provide adequate treatment out of their own resources.

2. Selective Service regulations would be amended to permit the necessary examination, duplication and proper use of confidential records relating to the defects of the registrant.

3. The National Director of Selective Service would be asked to issue the following regulations to all local boards: the chairman of the local board shall write to all registrants in the special classifications advising them that dental defects are the primary cause of disqualification and that these defects are considered remediable in the opinion of the examining dentist; the chairman shall further advise such registrants to have the remediable dental defects corrected by their own dentist or, if the registrant is unable to bear this cost out of his own resources, to apply to the state or local Dental Rehabilitation Committee; the chairman shall further advise such registrants of the time that the board has allowed for the correction of dental defects, at the expiration of which time the registrant must report back to the board for re-examination and re-classification.

4. In all states and local areas, dental rehabilitation agencies should be established by the designated federal agency on the following basis:

The State Dental Rehabilitation Committee shall be under the jurisdiction of the state agency designated to administer the rehabilitation program. It shall be composed of the ranking dental official in the state government (who will be the executive officer), representatives of proper state agencies, the organized dental profession . . . and such other agencies and groups as are deemed necessary. The majority of this committee shall be dentists nominated by the organized dental profession.

The Local Dental Rehabilitation Committee will be under the jurisdiction of the State Dental Rehabilitation Committee. The ranking community dental official will be the executive head of this committee which shall be composed of representatives of the State Dental Rehabilitation Committee, the organized profession and such other local agencies and groups as are deemed necessary. The majority of this committee shall be dentists nominated by the organized dental profession.

The duties of the state and local Dental Rehabilitation Committees will be to collaborate with professional groups, with state and local governmental agencies and with volunteer agencies in the development of state and local rehabilitation facilities.

5. The federal government will be asked to appropriate sufficient sums of money to pay for an effective rehabilitation program, the funds to be administered by a designated federal agency through official state agencies, state and local Dental Rehabilitation Committees.

6. Federal funds are to be expended for dental care in a rehabilitation program under the following conditions:

a. Any method of rendering dental care may be employed for rehabilitation which is recognized and approved by the local Dental Rehabilitation Committee;

b. All standards of dental care rendered under this program must be in accordance with those recognized and approved by the local Dental Rehabilitation Committee;

c. The standards for dental fees and salaries under this program shall be determined by the local Dental Rehabilitation Committee based upon the standards of living in the community. A basis for determining unit-operation fees may be found in the fee schedule of the Veterans' Administration.

d. Any method of compensation for dental care may be employed in this program which is approved by the local Dental Rehabilitation Committee. This includes unit-operation, salary or capitation fee.

The Board of Trustees assigned the development of this dental rehabilitation program to the National Health Program Committee, of which Dr. Harold W. Oppice, of Chicago, is chairman.

Commission

On August 15 Paul V. McNutt, Federal Security Administrator who is in charge of all health and welfare activities during the national emergency, received the report of the Commission on Physical Rehabilitation which advocates a voluntary, government-financed program for the physical rehabilitation of rejected selectees.

In approving the Commission's report, Administrator McNutt said that the proportion of registrants rejected because of physical defects was "rather alarming" in view of the extraordinary demand which the over-all defense program was making on the manpower of the country.

"The inevitable conclusion is," he said, "that our reservoir of physically qualified manpower is disappointing. While this program is directed primarily toward making more men available for military service, it has far greater implications on the future public health of the country, particularly in relation to the opportunities for the replacement of these registrants into civilian pursuits after the emergency is over."

Comment

Two statements in the Commission's report are of interest in connection with the A.D.A. program for dental rehabilitation. The report stated that the Commission had been authoritatively informed "that the army will maintain its present high physical standards of eligibility for military service and will not undertake the rehabilitation after induction of men classified by Selective Service and the army induction boards as having remediable physical handicaps." This would seem to indicate that adoption of the second point of the A.D.A. was not looked upon with favor by army officials even though it represented the most effective method of rehabilitating rejected registrants.

The second point of interest in the Commission's report is that "in order to meet the situation realistically, it is recommended that Congress enact legislation to defray the cost. As this is primarily a matter of vital necessity for national defense, the cost should be met directly by federal defense appropriation to the Federal Security Agency, when needed, utilizing fully its available local medical, dental and hospital facilities. Without federal legislation of this nature, it can be predicted that little progress in voluntary physical rehabilitation is to be expected."

This statement would seem to indicate that the third point of the A.D.A. program is the one most likely to meet with official approval. In that case, the A.D.A. would seek to establish the program under the principles enunciated in the plan. These principles have already been approved by the House of Delegates of the American Dental Association.

New Plan

On August 14 a sweeping revision of Selective Service induction procedure was ordered by the War Department in an effort to meet protests that many men called to arms have quit their jobs and made other final arrangements only to be turned down at the last minute by army examiners.

The department worked out a new system last spring and tested it in Pennsylvania in May and June. This system has now been approved in principle and the high command of the army has ordered it extended to all other states as rapidly as state selective service directors can work out details covering the local situation.

While the new procedure thus would vary somewhat from state to state, the principle of organization in all cases would be to give the potential soldier his physical examination as far as possible ahead of the date set for induction, and as close as possible to his home. This represents almost a complete reversal of the present general practice of giving army examinations at reception centers after a man reports for military duty.

Experiment

In Pennsylvania the experimental system called for a pre-induction physical examination board in every metropolitan area of 100,000 or more. This distribution was designed to put a board within one day's journey of every prospective selective service trainee in the state.

From the outset the plan also contemplated that in states of low population and great expanse the examining boards would not be in fixed localities but would follow circuit-riding schedules so that no man would be inconvenienced in having to report for examination.

Old System

Under the old system a trainee usually went through the following routine: first, he was notified by his local draft board that he was in Class 1-A; second, he received a preliminary physical examination by draft board physicians and dentists; third, he was ordered into the army and given several days in which to arrange his affairs; fourth, he reported to an army reception center and received the strict army physical examination. If the registrant passed he was in the army, if not he was sent home.

The strong protests against the old system where men were rejected after they had made all preparations to leave civilian life apparently have been effective in lightening this burden for selective service registrants.

Nutrition

Another experimental problem to improving the health of Selective Service registrants was proposed by George S. Perrott, chief of the division of public health methods of the United States Public Health Service in a recent address before the Population Association of America.

An experimental program would be launched for the 43 per cent of the trainees who are now, according to Perrott, rejected for active military service. The plan would seem to discover to what extent the physical defects of young men might have been avoided by proper nutrition and medical care during childhood. A striking increase in the proportion of rejections because of defective teeth has occurred since the world war. This, Dr. Perrott suggests, may indicate that young men today have had less dental care during childhood and adolescence than in the past.

Most observers anticipate that legislation will soon be introduced into the federal congress to put into practice the basic plan outlined in the recent report of the Commission and which has just secured the approval of the Federal Security Agency.

State Program

On August 30, Paul G. Armstrong, state director of selective service, announced the creation of a special medical advisory board to review all cases where men were rejected for insufficient cause by local board physicians and those cases affected by changes in the physical standards of the army. "We believe," said Armstrong, "a great many men who were rejected earlier will now be found physically fit. They have been pulled over the border line or will be through the cooperation of the new board."

Special Unit

The special unit will be known as Medical Advisory Board No. 39 and will operate independently of the thirty-eight regular medical advisory or appeal boards in Illinois. It is organized into divisions according to medical specialties.

Men deferred because of active infections will be required to come in for reexamination. Local draft boards, according to Armstrong, will use legal power to force such men to come in for reexamination.

The dental division of the state health department has promised to cooperate. The Chicago dental division will be headed by Dr. John A. McCallum who will be in charge of a staff now being formed with the cooperation of the Chicago Dental Society.

Eruption Tables of Permanent Teeth of Chicago School Children

By Carl Greenwald, D.D.S.* and Bion R. East, D.D.S.**

In a city-wide dental survey of Chicago school children which was conducted under the direction of one of the authors† among many items noted was the number of erupted teeth.

Other Reports

Others who have studied this condition have reported that children of the same chronological ages differed widely in the number of erupted permanent teeth. Therefore, it was thought worth while to report findings in a group of Chicago elementary school children whose records are being studied prior to a tabulation of the voluminous data collected in the entire survey.

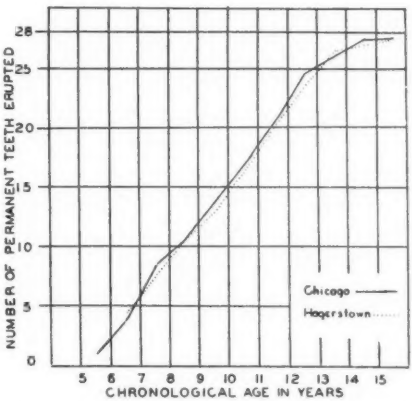

Figure 2. Average number of permanent teeth erupted in girls of specified chronological ages in Chicago and Hagerstown, Maryland. (Third molars excluded.)

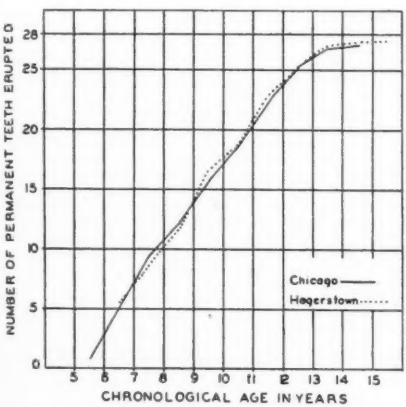

Figure 1. Average number of permanent teeth erupted in boys of specified chronological ages in Chicago and Hagerstown, Maryland. (Third molars excluded.)

There were 1,944 white children in the group selected for preliminary study, this number being divided about equally between the sexes. These children attended two public schools in the same neighborhood and were selected for study for no other reason than that their records were complete and available.

Distribution

In *Tables 1 and 2* the frequency distribution, total and mean number of erupted permanent teeth for a given sex and chronological age, are given. The tables demonstrate a wide range in the number of permanent teeth erupted at any specified age. For example, among

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†Greenwald.

Table 1. Number of Chicago Girls Having Specified Total Number Permanent Teeth Erupted.

Number of Permanent Teeth Erupted	AGE IN YEARS AT LAST BIRTHDAY											Number of Children All Ages	Total Permanent Teeth Erupted
	5	6	7	8	9	10	11	12	13	14	15		
0	53	11	2									66	0
1	3	3	—									6	6
2	5	11	3									19	38
3	1	7	1									9	27
4	1	13	—	1								15	60
5	—	5	2	—								7	35
6	5	25	5	2								37	222
7		3	4	—	1							8	56
8		10	13	6	—							29	232
9		4	2	1	—							7	63
10		6	24	11	1		2					44	440
11		1	13	13	3	2	—					32	352
12		2	23	49	15	12	4	1				106	1272
13			—	13	3	11	1	—				28	364
14			2	10	7	9	2	—				30	420
15			—	5	9	6	—	1				21	315
16			1	2	4	7	7	2				23	368
17			—	1	2	10	4	3				20	340
18			1	1	4	7	6	1				20	360
19				2	7	9	11	—				29	551
20				1	1	11	9	3	1			26	520
21				1	4	4	6	4	—	1		20	420
22				—	5	5	15	6	—	—		31	682
23				1	—	5	8	6	4	2		26	598
24				1	1	11	24	12	5	—		54	1296
25					1	1	13	9	5	—		29	725
26						5	16	26	9	1		57	1482
27						4	12	21	16	8		61	1647
28						3	15	42	54	23		137	3836
(Children) TOTAL	68	101	96	121	68	122	155	137	94	35		997	16721
Mean number Teeth erupted	.73	5.0	9.6	12.3	15.7	18.4	22.5	25.3	26.9	27.2			

the girls at the age of six, it was found that eleven children had no erupted permanent teeth, while two had twelve teeth each. The ranges observed in the various sex-age groups are almost identical with those in the Klein and Cody study of the eruption of permanent teeth among Hagerstown (Maryland) school children.

Sex-Age Groups

In *Figures 1* and *2* we present curves (solid lines) formed by connecting the mean values of the several sex-age groups among the Chicago children. In the same figures we also show similar curves (broken lines) representing the values observed in the Klein-Cody studies at Hagerstown.

No Difference

The respective curves for the Chicago and Hagerstown boys and girls approach identity. For all practical purposes, they may be said not to differ.

It may be concluded, therefore, that the forces which cause the eruption of permanent teeth do not differ in Hagerstown children from those in children who reside in Chicago.

Table 2. Number of Chicago Boys Having Specified Total Number of Permanent Teeth Erupted.

Number of Permanent Teeth Erupted	Age in Years at Last Birthday											Number of Children All Ages	Total Permanent Teeth Erupted
	5	6	7	8	9	10	11	12	13	14	15		
0	27	26	3									56	0
1	1	8	—									9	9
2	6	11	2									19	38
3	3	6	3									12	36
4	2	6	2	1								11	44
5	1	8	1	—								10	50
6		15	14	6								35	210
7		6	8	1								15	105
8		6	9	3								18	144
9		5	6	6	1							18	162
10		8	24	27	4	2						65	650
11		1	11	5	3	—	3					23	253
12		1	13	35	34	25	6					114	1368
13			—	8	14	5	4	1				32	416
14			1	5	11	14	12	2				45	630
15				2	7	8	7	1	1			26	390
16				—	6	9	2	5	3			25	400
17				1	3	5	3	2	—			14	238
18				1	5	7	3	2	—			18	324
19					2	3	6	1	1			13	247
20					2	9	6	2	2			21	420
21					—	7	8	2	3			20	420
22					1	5	9	10	4			29	638
23					1	2	1	10	3	1		18	414
24					1	5	8	15	7	1		37	888
25						1	7	9	5	1		23	575
26						4	14	13	9	3	2	45	1170
27						3	5	15	7	5	1	36	972
28						1	12	39	52	24	12	140	3920
(Children) Total	40	107	97	101	95	115	116	129	97	35	15	947	15131
Mean number Teeth erupted	.9	4.1	8.5	10.8	13.9	17.0	20.6	24.5	26.0	27.4	27.5		

Caries in Other Races:—Pickerill reported in 1923 that among the Maori school children of New Zealand who lived under civilized conditions, 15.6 per cent of the teeth were carious. The older Maoris had a high immunity to caries. This was once gruesomely attributed to the fact that in their primitive state these people were cannibals, but Pickerill observes that this cannot be the reason, since the eating of human flesh was restricted to the adult males of the tribe, whereas the skulls of Maori women and children, as well as those of the men, show uniform excellence of the teeth in the period before the white invasion.

The Samoans have been frequently spoken of as possessing beautiful teeth. R. A. Ferguson, who made a dental survey in the schools of American Samoa in 1934, found that among purebred Samoan children living on the simple, coarse foods common in the native diet, caries existed only in 1.8 per cent. Even in children of mixed blood the percentage of caries was only 4.84. He states, however, that the native immunity is decreasing in the younger generation. The natural Samoan diet, he reports, consists mostly of bananas and taro, a starchy tuber. The people also eat cocoanuts and other fruits. They get very little meat or fish and chew much sugar cane. They never clean their teeth.—Brekhus, Peter J. Your Teeth: Their Past, Present, and Probable Future. Minneapolis: The University of Minnesota Press. 1941.

EDITORIAL

HOUSTON

The attention of the entire dental profession will soon be fastened on the happenings at Houston as the American Dental Association convenes there for its 83rd annual meeting. Many important problems will be considered by the House of Delegates, the policy making body for American dentistry. In less eventful times the House of Delegates decides many issues that have an important influence on the progress of dentistry. In an emergency such as now exists, the House of Delegates has the doubled task of planning for the crisis and for the relatively less urgent times that will follow it. It requires no great foresight to see that the patterns worked out under the stress of a present emergency can be built with such solidity that they will remain as a part of the more distant future.

The House of Delegates, however, has the supreme advantage in knowing that it represents an undivided profession. There are no schisms on major policies that will work to the detriment of a united effort in the tasks that face the profession. With this knowledge the House of Delegates can confidently attack the issues of the day and the profession will await the outcome of its deliberations with assurance and interest.

The sessions of the House of Delegates will, however, be only one of many points of interest at the meeting. The scientific sections will present the programs that annually document the progress of American dentistry. It is here that the technical accomplishments which characterize dental practice in this country receive their impetus. The formal findings of the research laboratory soon become the basis for improved technics and materials in the office of the private practitioner. To this evolution the meetings of the scientific sections make a very large contribution and it is the privilege of every member to share in the benefits.

The host city of the Southwest has spent many months in preparation for this meeting. Visitors may be assured that every thoughtful gesture will be made for their convenience and comfort. Every annual meeting of the American Dental Association is an opportunity—and the Houston convention an exceptional one—for every dentist to reap the products of membership in organized dentistry.

THE REHABILITATION PROGRAM

The adoption of a program by the Board of Trustees of the American Dental Association for the rehabilitation of dentally disqualified registrants under the Selective Service Act is a genuine and significant sign of leadership. It is the answer to those who have charged that the profession has not been completely aware of its responsibilities in this time of emergency. It is a call to those individuals and groups who have been seeking a proper method of rendering aid. It is a considered opinion of the most effective methods by which the objectives of dental rehabilitation may be reached. It is an opportunity for government to cooperate in a practical plan to make additional manpower available to the armed services. Members will do well to become familiar with its provisions and for this reason the program is published elsewhere in this issue.

Any program of rehabilitation must be judged on its desirability and on its effectiveness. The program approved by the Board of Trustees recognizes these criteria.

Dental rehabilitation performed by the individual or the family out of private resources is, of course, desirable. It is not effective. The reasons for this must be

obvious. Many persons are unwilling or unable to pay for the correction of their dental defects in order to become eligible for military service.

Dental rehabilitation by states, communities and volunteer agencies under their own initiative is also desirable but also has severe limitations in effectiveness. These agencies are already burdened with the effects of the depression and the emergency. It is not likely that they will find funds for dental rehabilitation on a scale large enough to make an appreciable contribution to increasing availability of military manpower.

The program of the American Dental Association recognizes the limitations on effectiveness at those two levels although it does note their desirability. As the most effective plan it urges the induction of dentally disqualified registrants into the armed forces on provisional standards. After this is done the dental defects can be corrected economically, rapidly and efficiently by the dental personnel of the armed forces.

The only argument in good standing that can be arrayed against such a program of rehabilitation is that the armed forces would have to adjust their standards. This argument, however, is largely offset by other advantages. The Dental Reserve Corps is now closed to all except those dentists already inducted. The increased demand for dental service in the armed forces, under the provisional induction plan, would ultimately have the effect of again opening the Dental Reserve Corps to eligible dentists. This is highly desirable, particularly for the young dentist whose uncertain status under existing conditions now constitutes a definite and preventable hardship.

There are other advantages. No new mechanism would have to be created to administer and provide dental service for rehabilitation since facilities are already available although they are limited in character. The services rendered would be competent since they would be given under the regulations that obtain in the armed forces. The responsibility of paying for these services would fall where it properly belongs. No lengthy legislative procedures would impede moving toward an immediate and constructive program. If effectiveness, therefore, be the criterion the provisional induction plan has few superior to it. If, on the other hand, desirability is the criterion, it also has few superiors. On both counts it meets the needs of a sound program for dental rehabilitation.

If the provisional induction plan is discarded for whatever reason, and if legislation must be sought to procure funds for rehabilitation, the program adopted by the American Dental Association provides a specific plan of organization. This program, once legislation is enacted, will be effective provided the basic details of the A.D.A. program are included. If they are not, the rehabilitation efforts could boggle down under faulty administrative methods.

It is likely, on the basis of present evidence, that the next few months will see the adoption of some plan for rehabilitation. The program advanced by the American Dental Association should receive the serious consideration of government officials before any plan is finally approved. Dentists in every part of the country are ready and willing to aid in this task which has such importance to the national welfare. The dentists of Illinois will demonstrate again their response to the nation's call in its time of need.

ATTRITION

The dental profession is not replacing with new graduates the annual toll that is taken by the death and retirement of older dentists. This simple statement summarizes but one of many important problems. Unless there is compensation for the normal attrition of the profession, the present ratio of dentists to population cannot be maintained. Certainly no new programs involving more care to larger groups of

of the population can be contemplated in the face of a diminishing professional personnel. If there are not enough dentists to supply the demand for dental service, there is every reason to believe that sub-professional groups will be created in an attempt to meet the demand. This can result only in a lowering of professional standards and in the quality of service that is now provided.

A static or diminishing dental population, therefore, represents a real danger. It is encouraging to know that the problem is being faced realistically. The publication by the Council on Dental Education of the American Dental Association of a brochure[1] on dentistry as a professional career is a step in the right direction. It should be followed by a sustained campaign to explain to young men and women the opportunities that dentistry offers in the professional field. If this is done without a single concession to present standards, it is possible that this danger of a diminishing profession will ultimately be checked.

THE FIRST DECADE

Ten years ago the phrase, "prosperity is just around the corner," was beginning to acquire its familiar and hollow sound. We were just becoming accustomed to seeing men sell apples on street corners and form huddled bundles in the doorways and under the bridges of the great cities. There was a great deal of talk about "relief" and "depression" was no longer a novel word in everyday conversation. The stock market fell like a topped shot into the sand trap while banks and business sliced their way into the rough of insolvency. It was a time when almost no one thought of new enterprises; there was considerable satisfaction in keeping old ones above disaster.

It was in such days that the first issue of the ILLINOIS DENTAL JOURNAL made its appearance. It was created out of the courage of the state society and out of the needs of its growing membership. In the intervening decade the JOURNAL has made progress out of all keeping with its inauspicious beginning. It has established itself as a publication of influence not only within the confines of Illinois but beyond them as well. It has formed and guided dental opinion in many quarters. It has kept pace with professional progress and made its contributions to it.

In the first ten years of publication, the JOURNAL has had but two editors, Franklin B. Clemmer and Harold W. Oppice. Both of them contributed greatly to establishing the JOURNAL in its present position of eminence. In the first years of the new decade it will be the task of the present editor to continue those policies which motivated its founding, to build month by month toward a strong and informed membership, to serve needs as they appear in the interest of the individual and of the profession.—*Harold Hillenbrand.*

"THEY KNOW NOT WHAT THEY DO"

On every side, in the spoken and written word, there is being impressed upon us collectively and individually, the absolute necessity for preparedness. Those of us who have never before given much serious thought to this essential phase of living, who have more or less taken it for granted, are realizing with a terrific jolt the plight in which we find ourselves.

Preparedness for defense of all that we love and cherish and have fought for; we are learning that this is not at all possible without some measure of sacrifice, as nothing really worth while has ever been achieved without cost in some way or other.

[1] Dentistry as a Professional Career. Chicago: The Council on Dental Education of the American Dental Association. 1941.

Strange at any time, but peculiarly strange at such a time as this, is the kind of thinking that would prompt the passage of an anti-vivisectionist ruling in a city that would loathe to be termed as anything but intelligent. Yet here in our own state such a ruling has been approved by the Peoria City Council which has decided that it will no longer supply institutions with dogs for experimentation. Such an action can only be the result of exceptional shortsightedness and this, in turn, is due solely to propaganda that is passed around by unthinking people who are guided almost entirely by their emotions. It is not charged that these people have malicious intent, but they are unwittingly guilty of contributing to a situation which, if not checked, will cause great suffering and sorrow to their fellow men as well as to themselves.

It is reasonable to assume that the people responsible for movements of this sort would demand the best possible care when their loved ones or they, themselves, are stricken with some disease. One cannot help wondering just how they think this care is possible if it is not the result of long practice and experimentation in which a certain number of animals must necessarily be sacrificed if any degree of proficiency is to be attained.

It is very doubtful if these individuals would take even their automobiles, when they are in need of repair, to anything less than a skilled mechanic. Certainly that mechanic was not developed through mere guesswork, but through the tearing down and putting together of the pieces of machinery with which he must deal. How utterly illogical then to expect those persons engaged in the great task of preventing and curing disease, in both man and animal, to gain the knowledge and skill required of them other than through long, tedious hours of experimentation.

There is a great need for some clear, straight thinking and speaking that will eliminate all of the foolish claptrap that crops up here and there and which, if not checked, threatens to become dangerous. Certain magazines and newspapers deserve much of the blame for the utterly false propaganda and inane pictures that they have printed. These play on the emotions of unenlightened readers and tend to convey the impression that scientists derive a special satisfaction and pleasure from experimenting on the poor, helpless creatures that fall into their hands.

Any individual who cares to investigate will find that every possible care is taken in the experimentation on animals that must necessarily take place in the interest of medical and dental science. Every scientist worthy of that title respects, indeed, often loves, the dumb creatures with which he must deal. It is not a simple task for him to destroy life and yet he must train himself to think in terms of the greater life that is to be preserved. It hardly seems necessary to point out that he uses every precaution that he has at his disposal to prevent suffering on the part of those animals and that they are never "sacrificed unnecessarily."

Men speak of the preservation of liberty and democracy at any cost—at the cost of countless thousands of human lives if necessary. Yet there are those who wring their hands in despair at the thought of sacrificing the lives of animals, a sacrifice that is absolutely essential if we are to have the healthy bodies and minds with which this tremendous task shall be accomplished. Sound health of body and mind cannot be acquired or preserved without the knowledge and skill of medical and dental science. And this knowledge and skill cannot be acquired without experimentation on living creatures. The choice must be made.

Now, more than ever before, it is the duty of every intelligent and patriotic citizen to exert all possible effort toward the enlightenment of individuals responsible for this anti-vivisection propaganda so that their thoughts and efforts can be directed into right and beneficial channels. All must fight strenuously so that this harmful campaign will not result in the adoption of such detrimental rulings as the one recently approved in a neighboring city.—*William G. Skillen.*

CURRENT NEWS AND COMMENT

NOTICE TO DRAFT BOARD DENTISTS

The Committee on Dental Preparedness of the American Dental Association has received the following communication from the Selective Service System in regard to dentists who are appointed to local draft boards.

After a dentist is notified that he has been appointed as examining dentist to a local board, he should report to the local board at once for instructions relating to duties, hours, when his services will be required, etc. At this time he will sign the acceptance of appointment, the oath of office and a waiver of compensation. It may be some time before he receives the official certificate of appointment from Washington.

The examining dentist should then procure Medical Circular No. 2, Dental, and familiarize himself with it so that he will know the dental requirements for registrants.

STATE DRIVES AGAINST ILLEGAL LABORATORIES

Warrants charging two dental laboratories and seven dentists with violations of the state dental practice act, were issued on August 26 by Judge Albert Isley, of Jasper County, sitting in County Court in Chicago, at the request of Emerson C. Whitney, supervisor of complaints for the state department of registration and education.

The warrants were sent immediately to the sheriff's office, and squads of deputy sheriffs were sent out to make the arrests.

The dental laboratories, charged with illegal advertising, and the addresses as given by Assistant State's Attorney Roman Stachnik, are: the A and P Dental Laboratories, Inc., at 7 West Madison street, 1620½ West 47th street, and 7814 South Halsted street, and the Excel Dental Laboratories, Inc., at 32 West Washington street, 11351 South Michigan avenue, 4707 Irving Park road, 6311 South Halsted street, and 3068 Lincoln avenue, all of Chicago.

Named in the A and P Laboratories warrant also were Henry Prindiville and Donald B. Alexander, charged with practicing dentistry without licenses, and in the Excel warrant, A. L. Young on the same charge.

Dentists named in the other warrants, charged both with practicing without licenses and with illegal advertising and their addresses as given by Prosecutor Stachnik, are: Albert E. Winner and Anthony Peterson of 127 North Dearborn street; Harry Franklin, 3336 West Evergreen street, and Otto Butz, 64 West Randolph street.

PROCEDURE FOR INDUCTED DENTISTS

The procedure to be followed by dentists who have been inducted under the Selective Service Act and who wish to apply for commissions in the Dental Reserve Corps has been outlined in a letter from the Adjutant General's Office in Washington. The text of the letter has been made available through Dr. C. Willard Camalier, Chairman of the Dental Preparedness Committee of the American Dental Association.

June 20, 1941

Subject: Appointment in the Dental Corps Reserve of Inducted Individuals.

To: Commanding Generals Each Army, Corps Area and Department.

1. With reference to the War Department radiogram of May 5, 1941, file AG 210.1 O.R.C. (3-25-41)R-A, which directed that inducted individuals who were qualified for appointment in the Dental Corps Reserve . . . would be encouraged to apply for a Reserve commission, further instructions are herein announced.

2. In order to expedite action upon applications for commissions in the Dental . . .

Corps Reserve of qualified individuals who have been inducted under the provisions of the Selective Service and Training Act of 1940, the following procedure will be followed:

a. Each application accompanied by a *final type physical examination* will be forwarded through local stations or camp commanders to the Commanding General of the Corps Area in which the applicant is serving, who, without reference to the Corps Area of permanent residence of the applicant, will approve or disapprove the application submitted. If approved, the Corps Area Commander will refer the application to an examining board, convened at the station of the applicant, who will conduct the examination as provided in paragraph 21, AR 140-5.

b. The general scope of the examination will conform to the provisions of paragraph 23, AR 140-5. To expedite the action of the board, the president thereof will communicate direct with the Corps Area Dental Officer . . . at the Headquarters of the Sixth Corps Area, with the request that he secure from the American Dental Association . . . the information outlined by paragraphs 23b, 23c, and 23d, AR 140-5, which cannot be obtained from the candidate or from local sources. Owing to the fact that the candidate may have been inducted soon after graduation, the provisions of paragraphs 6c (2) or 6c(3), AR 140-33, as applicable, will be waived.

c. The examining board will act promptly upon each application. The report of the board with the accompanying papers, will be forwarded direct to the Corps Area Commander who has convened the board. After appropriate action by the Corps Area Commander, all papers will be forwarded to the Adjutant General for final action, using "immediate action" stationery.

3. After appointment has been accomplished, extended active duty will be effected in the following manner:

a. Upon receipt of proper notification that the individual has accepted the commission tendered him, the Adjutant General will direct the appropriate headquarters to discharge the newly commissioned officer from his enlisted status upon a specified date for the convenience of the Government.

b. The Adjutant General will furnish notification of the appointment to the Commanding General of the Corps Area wherein the newly commissioned officer indicated permanent residence, and will direct that necessary orders be issued to order the officer from his temporary address where he was discharged as an enlisted man to extend active duty for twelve (12) consecutive months at a station to be designated by the Corps Area Commander issuing the orders. The effective date will be specified by the Adjutant General, and will be the day following that of discharge from enlisted status. The officer will be chargeable to the quotas allotted to the Corps Area. If no vacancy exists to which the officer could be charged, he will be ordered to extended active duty as an excess officer.

4. The Corps Area Commander will maintain a record of officers ordered to duty in excess of existing quotas—and will permit a like number of Reserve officers of the same grade and section to revert to an inactive status upon completion of current tours of extended active duty, provided at that time these officers are still considered to be in excess of the then authorized quotas.

By order of the Secretary of War: E. S. ADAMS, *Major General, The Adjutant General.*

ARMY REPORTS ON ITS PHYSICAL CONDITION

According to health records from all nine corps areas, the Army of the United States is in the best physical shape it has been in since the emergency began, the War Department announced, July 31. No epidemic diseases are prevalent. During the second week in July the admission rate to all Army hospitals for all causes was the lowest of the year. The rate went up slightly during the third week, but blistered heels and similar minor ailments made the difference.

For the last two months respiratory diseases have been no higher than the ten year rate for the preemergency army. This ten year rate is considered by Army medical men to be excellent.

At present the rate of men off duty because of diseases is 12 per thousand. In the Army a man is either on duty or in a hospital, so the same causes that would force a civilian to take it easy for a half day send a soldier to the hospital for attention.

The Surgeon General's Office is notified by telegraph of each case of such serious epidemic diseases. In the last seven months only twelve cases were reported from all corps areas.

CHICAGO MIDWINTER MEETING MOVES TO PALMER HOUSE

The 1942 Midwinter Meeting of the Chicago Dental Society will be held at the Palmer House, according to an announcement recently issued by Dr. Glenn E. Cartwright, president of the society. For more than a decade this annual meeting has been held at the Stevens Hotel.

The dates for the meeting, according to Dr. Cartwright, are February 23-26, 1942.

APPLETON NEW DEAN AT PENNSYLVANIA

The appointment of Dr. Joseph T. Appleton as dean of the School of Dentistry of the University of Pennsylvania was announced recently by Thomas S. Gates, president of the university. Dr. Appleton succeeds Dr. Charles R. Turner, dean of the school since 1917. Dr. Turner will continue to serve the university as professor of prosthetic dentistry, a post which he has held since 1902.

Dr. Appleton, who has been acting dean since February, 1941, is professor of bacterio-pathology on the school's faculty. He is an alumnus of the school and has taught there since 1914.

N.Y.U. COURSE IN ANESTHESIA

A course in inhalation anesthesia will be given at the New York University College of Dentistry from October 3-7. Classes will be conducted by E. A. Rovenstine, professor of anesthesia at the university, and Dr. A. S. Mecca, assistant professor of oral surgery at the university. Tuition for the entire course is fifty dollars. Information may be secured from the Office of the Dean, 209 East 23rd Street, New York City.

STAGE PRISON RODEO FOR A.D.A. MEETING

Visitors to the meeting of the American Dental Association, to be held in Houston on October 27-31, have been invited to attend a showing of the famous Prison Rodeo staged by almost two hundred of the more or less permanent residents of the Texas State Penitentiary. A special performance has been arranged for October 26 and Warden W. W. Waid has reserved five hundred seats for A.D.A. convention guests on that day. A special train will be secured to make the trip to Huntsville, Texas, the scene of the rodeo.

This rodeo, which has become one of the most sensational entertainment features of the South, is staged by the prisoners at the penitentiary for the benefit of the recreation fund. Reservations, at two dollars per person, should be made with Dr. Walter T. Newton, 344 Rice Hotel, Houston.

ANNOUNCE PROGRAM OF DENTAL HEALTH INSTITUTES

In order to be properly balanced a dental health educational program must include plans and programs for the education of the dental profession as well as for the general public. To educate the laity without keeping the dental profession apprised of the material or methods used and of new developments in children's dentistry, would sooner or later result in confusion and seriously interfere with the further development and ultimate success of the program. This situation can be met in various ways.

For a number of years in Illinois two types of educational programs have been conducted for dentists: the yearly school of instruction, now known as the Child Dental Health Education Program and the Dental Health Institutes.

Child Dental Health Education.—This phase of postgraduate education is conducted during the annual meeting of

the Illinois State Dental Society by the Committee on Dental Health Education in cooperation with the Division of Dental Health Education of the Illinois State Department of Public Health. Various phases of advanced thought and procedure relative to children's dentistry are presented in such a manner that they can be adopted for practice by dentists in their respective communities. All such sessions in the past have been well received and have proved to be highly beneficial to all who have attended. The relatively small number that found it convenient to attend these sessions caused the state society to expand its efforts at postgraduate education by making such programs available in all sections of the state.

Dental Health Institute.—Accordingly, the idea of establishing Dental Health Institutes was initiated by the society's Committee on Dental Health Education and carried into effect with the cooperation and the financial support of the Division of Dental Health Education of the Illinois State Department of Health. The Study Club and Membership Committees of the society were also invited to participate in the formation and conduct of these institutes because of their duty to stimulate interest in the work of organized dentistry. These institutes not only provide refresher courses for the dentist but also afford a means of stressing the importance of dental health education to the public, especially to leaders of lay and civic organizations, school officials, health officers, teachers, parents, and other interested lay individuals. The relationship between dental public health and children's dentistry is also emphasized in the course of these meetings.

The objectives of the institutes may be itemized as follows: 1. to demonstrate modern technique in operative procedures in children's dentistry; 2. to arouse among dentists, as well as the public, increased interest in children's dentistry; 3. to discuss with the dental profession the work and functions of various committees of the Illinois State Dental Society and their relationship to the Division of Dental Health Education, Illinois State Department of Public Health; 4. to discuss the public health aspect of children's dentistry and the work and available services of the Division of Dental Health Education; 5. to discuss with representatives of lay or civic organizations, school superintendents, teachers, parents and other interested lay individuals, dental health education as well as the interest of the Illinois State Dental Society in dental health education.

In previous years an institute has been held in each of the downstate districts of the society with the Executive Council member from the district in charge. This year there will be eight institutes: one will be held in Chicago, two in the Southern District, and one in each of the downstate districts. .The first institute of the season will be held in Carmi on September 25, with Dr. Geneve Riefling as the essayist.

The complete schedule for the remaining institutes will be published in the next issue of the ILLINOIS DENTAL JOURNAL. Notices will be sent to members of the state society in each district several weeks in advance of the scheduled meetings. It is urged that each member set aside the announced date and attend the institute in his respective district.—*Lloyd H. Dodd, Chairman, Committee on Dental Health Education; Arthur E. Glawe, Chairman, Study Club Committee; James E. Mahoney, Chairman, Membership Committee; Charles F. Deatherage, Chief of Division of Dental Health Education, Illinois Department of Health.*

ANNUAL TRANSACTIONS STILL AVAILABLE

Copies of the *Annual Transactions* of the Illinois State Dental Society may still be ordered by sending a check or money order to Dr. L. H. Jacob, 634 Jefferson Building, Peoria. The cost per volume is one dollar.

DENTAL SUPPLIES GIVEN PRIORITIES

E. R. Stettinius Jr., Office of Production Management priorities director, in August announced a "health supplies rating plan" under which priority ratings of A-10 will be given to provide scarce materials necessary for medical, surgical, and dental essentials necessary for public health.

A.D.A. MEETING IN HOUSTON

Preparations are still continuing at a rapid rate for the annual meeting of the American Dental Association which will be held in Houston, Texas, on October 27-31. Delegates to the meeting will represent the largest membership in the history of the Association as more than fifty thousand dentists are now on the rolls. It is anticipated that more than eight thousand dentists will register during the meeting.

The section meetings, clinics, and exhibits will be held in the new Sam Houston Coliseum. Eight sections will present scientific programs. In addition there will be four hundred table clinics and one hundred scientific and health exhibits. Headquarters for the meeting will be maintained at the Rice Hotel. Reservations to the meeting should be made with Charlotte Becraft, Field Secretary, American Dental Association, Rice Hotel, Houston. A list of available hotels may be found elsewhere in this issue. Members are urged to send their reservations as soon as possible so that the desired accommodations may be secured.

The following delegates and alternates will represent the society at the meetings of the House of Delegates:

Delegates: J. R. Blayney, Neil D. Vedder, L. H. Jacob, R. W. McNulty, N. A. Arganbright, Glenn E. Cartwright, Lloyd H. Dodd, John J. Donelan, Frank A. Farrell, Arthur E. Glawe, Frank J. Hurlstone, Warren L. King, Leo W. Kremer, LeRoy E. Kurth, Charles S. Kurz, James E. Mahoney, L. G. McMillan, William E. Mayer, Harold W. Oppice, A. C. Spickerman, J. A. Steele, Harold W. Welch, Joseph B. Zielinski and Melford E. Zinser.

Alternates: Clarke E. Chamberlain, T. A. Fitzpatrick, W. J. Gonwa, J. J. Guerrero, Fred E. Haberle, Harold Hillenbrand, Luther W. Hughes, Robert I. Humphrey, James H. Keith, Robert G. Kesel, E. B. Knights, W. A. J. Link, M. M. Lumbattis, W. A. McKee, W. I. McNeil, Vincent B. Milas, Z. W. Moss, William C. Phillips, W. R. Scanlan, C. L. Snyder, Ora E. Sterett, L. E. Steward, B. H. Tedrow and L. H. Wolfe.

PLAN VENEREAL CONTROL PROGRAM

A nationwide venereal disease control program in areas of military and defense industry concentration was announced on July 27 by WPA Commissioner Howard O. Hunter. The program has been approved by the President as a unit of the WPA national defense research and records assistance project, for which an allocation of $5,015,864 was made several months ago. The United States Public Health Service will act as the official sponsor.

Surg. Gen. Thomas Parran said that the purpose of the program is to provide assistance to state and local health authorities in (1) bringing under immediate treatment selectees who have been rejected or deferred by their local Selective Service boards because of syphilis or gonorrhea and making these men available for military service on completion of treatment; (2) tracing the sources of infection and rendering potential spreaders of venereal disease noninfectious through prompt and adequate treatment; (3) placing treatment facilities for gonorrhea on a par with those for syphilis and providing medical and public information on new chemotherapeutic methods for curing gonor-

rhea, and (4) establishing emergency venereal disease control programs in "boom" towns where regular public health facilities are insufficient to cope with the problem.

Dr. Parran cited findings of Selective Service medical examinations which showed that 6 per cent of the draftees examined were infected with syphilis or gonorrhea.

FBI ASKS DENTISTS' AID IN DEFENSE

The Federal Bureau of Investigation, according to a statement recently issued by that agency to members of the dental profession, was appointed the coordinating agency in the investigation of sabotage, espionage and related national defense laws. This centralization of authority in connection with national defense matters was deemed expedient in view of the nationwide character of espionage and sabotage activities and the confusion and duplication of effort which existed during the world war period when there was no coordination of investigative activity and numerous private and law enforcement agencies handled investigation.

Many months ago the Federal Bureau of Investigation instituted the FBI Law Enforcement Officers Mobilization Plan for National Defense which has brought together as a cooperative unit to assist in national defense work the 150,000 police officers of America. Each quarter the fifty-four Field Divisions of the FBI hold conferences with local officers in strategic cities in the Nation and through these meetings plans have been formulated whereby the local officers are aiding the FBI in the actual investigation of cases.

The program of the Federal Bureau of Investigation, ably assisted by local law enforcement, is being carried out quietly, and every possible precaution is being taken to safeguard the rights and reputations of innocent individuals. Spies and saboteurs cannot be overcome by mass arrests and wild charges. Counterespionage, or keeping the spies under constant surveillance, and preventive measures are the effective weapons for these offenses against the country's internal security.

Under no circumstances is vigilante action needed today. Organized law enforcement, led by the FBI, is well able to handle the investigation of national defense violations. Mob action is undemocratic in practice regardless of how patriotic in aim. It definitely has no place in free America.

On the other hand the citizen has a definite task to perform. For years dentists have been assisting law enforcement officers through the facilities of their profession. Many important identifications have been the result. Dentists, like other patriotic Americans, can be of great assistance in the emergency by reporting any information indicating possible violations of the national defense statutes to the nearest office of the FBI. This should be done immediately, without prior evaluation or investigation. The information reported will be correlated with other data, and whatever action is necessary taken promptly.

Representatives of the FBI will be glad to discuss these matters in detail with members of the various State and local organizations of the American Dental Association at their meetings. In this event it is suggested that the officers communicate directly with the nearest Field Division Office of the FBI or directly with J. Edgar Hoover, Director, Federal Bureau of Investigation, at Washington, D. C.

"DENTAL CARIES" in SECOND EDITION

A second edition of *Dental Caries,* now in press, will be ready for distribution early in September. The first edition, issued two years ago, presented summaries of findings and conclusions on the causes and control of caries by 195 authors or groups of authors in twenty-five countries. The second edition will present not only revisions of many of the summaries in the first edition—the rest remaining unchanged—but also summaries by 42 additional authors or groups of authors in twelve countries. These volumes present the realities in accumulated knowledge bearing on the causes and control of caries. They afford opportunity for close study of the situation by every practitioner who wishes to ascertain the strength or weakness of current theories or procedures and indicate the need for further research in many relationships.

This volume has been compiled by the Advisory Committee on Research in Dental Caries for the Research Commission of the American Dental Association to promote understanding, clinical observation, and research in this field. Copies, bound in cloth, may be obtained from the American Dental Association, 212 East Superior Street, Chicago, Illinois. The first edition (1939) is one dollar and the second edition (1941) is two dollars.

PLAN EXTENSIVE A.D.A. EXHIBITS

An extensive program of scientific and health exhibits will be presented in the new Sam Houston Coliseum when the American Dental Association meets at Houston on October 27-31. Dr. Leo F. Marré, chairman of the Scientific and Health Committee, has announced that the following timely and authoritative exhibits will be on view during the meeting: Army Medical Museum, "Activities of the Army Dental Corps"; U. S. Public Health Service's, "Dental Activities of the U. S. Public Health Service"; V. H. Kazanjian, "Surgical and Prosthetic Restorations of the Face and Jaws"; George M. Hollenback, "Instruments and Methods Used in Testing Filling Materials." Exhibits from Chile and Argentina will also be displayed.

CALL 2,000 IN DENTAL RESERVE CORPS

Before the present emergency there were 268 officers in the dental corps of the army and about four thousand dentists on the roll of the Dental Reserve Corps, of whom about two thousand, the War Department announced on July 20, have been called to active duty. About one hundred and fifty dentists have been inducted into the army under the Selective Service and Training Act, and nearly all of them have made application for commissions. The first dentist to rise from the ranks under a new regulation permitting qualified trainees to accept commissions in the Dental Corps Reserve and to be ordered to active duty is Private Milton P. Paperth, a dentist from New Jersey now on duty at the Station Hospital, Fort Dix, New Jersey. Each of the one hundred and fifty dentists inducted into the army and who have now applied for commissions will be passed on by the army medical examining board and if approved will be appointed first lieutenant in the Dental Reserve Corps. Because the new regulation is designed to provide commissions for all qualified inducted dentists, for the present no more civilian dentists will be taken into the Dental Reserve Corps.

111,547 ILLINOIS MEN IN ARMED SERVICES

A total of 111,547 Illinois men now are serving in the various branches of the armed services, the state selective service headquarters announced recently. The figure includes enlisted men in the army, navy, marines, and coast guard, as well as National Guardsmen and draftees taken into the army up to August 1.

For the first time draftees led enlisted men in the compilation. The former totaled 49,781 men, compared with 46,289 enlistments in the army, navy, marines, and coast guard, and 15,477 National Guardsmen.

Since November 18, 1940, state draft boards have sent 58,059 men for examination at draft induction stations—54,022 white and 4,037 colored. Of these, 46,506 white men and 3,275 colored men were accepted for army service and inducted. White rejections totaled 7,516, or almost 14 per cent of those examined, while colored rejections were 762, almost 19 per cent.

Total state draft registrations were announced as 1,060,966 men, including 43,743 Illinois youths who registered for the draft on July 1. None of the draft

boards in the state has exhausted its supply of registrants available for immediate service, headquarters said.

SEEK NURSES FOR DEFENSE WORK

Mayor La Guardia, in his capacity as Federal Director of Civilian Defense, announced recently that in collaboration with the American Red Cross and the major hospitals of the country, his organization will train 100,000 Volunteer Nurses' Aides throughout the nation in the next twelve months.

The curriculum of instruction for the Volunteer Nurses' Aides, who will wear the uniforms and insignia of Civilian Defense, has been prepared by the Medical Division of the Office of Civilian Defense, the Red Cross and the Federal Security Agency. Eligibility in the corps is limited to women between the ages of 18 and 50 who have at least a high school education or its equivalent and who are physically fit.

Applicants for volunteer training can enroll for duty at local Red Cross chapter houses and the courses are scheduled to begin in each locality as soon as hospital arrangements are completed.

HONOR McNEIL WITH TESTIMONIAL DINNER

Dr. William I. McNeil, retiring president of the Chicago Dental Society, will be honored with a testimonial dinner on September 20 at the Palmer House. Dr. McNeil is also a past president of the Illinois State Dental Society.

Tickets, at five dollars per plate, may be secured from Dr. Robert J. Wells, 1525 East 53rd Street, Chicago. A cordial invitation to attend the dinner is extended to all friends of Dr. McNeil.

CHICAGO COLLEGE ALUMNI HOLD GOLF OUTING

The Alumni Association of the Chicago College of Dental Surgery, Dental School of Loyola University, will hold its annual outing at Sportsman Golf Club on September 17, according to an announcement by Dr. Henry Glupker, president of the Association. Sports of all types are scheduled on the program with golf and softball attracting most of the attention. Dinner will be served in the evening at 7:00 p.m. The Golf Club is located on Dundee Road, two miles east of Wheeling, Illinois, and a mile and one-half west of the Waukegan Road. Railroad transportation is available on either the Northwestern or North Shore lines.

CHICAGO MEETINGS START ON MONDAY, OCTOBER 6

The Chicago Dental Society announces a change in date of its first monthly meeting of the current year. The program will be held on Monday night, October 6, instead of October 7, as previously announced. Dr. D. Munger Hodgman, chairman of the program committee, has announced that George W. Crane, Ph.D., of Northwestern University, would be the speaker.

CHICAGO COMPONENT HAS OUTING ON SEPTEMBER 10

The annual outing of the Chicago Dental Society will be held on September 10 at the Medinah Country Club. Dr. Bob Placek, chairman of the golf committee has arranged a schedule of events that will conclude with dinner in the evening.

JOURNAL TO PUBLISH DIRECTORY IN OCTOBER

A directory of the Illinois State Dental Society will be published in the October issue of the JOURNAL. Members are asked to retain that issue for reference purposes.

HERE and THERE

Defense is bringing back the boom-town and approximately three and one-half million families in these United States of America will enter the $1,500-$2,000 annual income bracket for the first time. The flow of cash will undoubtedly reach fantastic proportions. Tobacco, gum, razor, pen and pencil manufacturers are already inaugurating an advertising program for the purpose of making their products more appealing to the vast new soldier market as well. Goods are wrapped in more attractive packages and premiums abound. One ecstatic effusion pushing the sale of a mere diary reads somewhat as follows: "A past master of executive and curvilinear connoiseurship, a geometrical cover plotting the surfaces of pleasure; you may have been brought up in Eastern palaces with seraglios surrounding you like the kiosks of an outworn subway, you may have been brought up near the Flower Boats of the Yantze, where well-bred girls of exquisite modeling strum softly on the old "Chi' en," but you've never seen the equal of this." We could use someone like that to advertise dentistry. Maybe we can't promise that it will be done up in attractive packages but we can appeal to the normal instinct of the coming generation, which bids them wear attractive smiles. Such smiles cannot be obtained over the counter; they come exclusively from teeth well-cared for which, in turn, come exclusively from dental offices. (Metropolitan papers please copy.)

Memory

Probably every one of us, at one time or another, has taken a course in memory training or if we haven't we should. (Study Club Committee please take note.) We've wanted to train our minds to remember names as well as faces. This fault is especially characteristic of the average physician or dentist. But, on the other hand, sometimes it is as important to forget as it is to remember. Remembering our troubles and problems, our failures and disappointments burdens us with useless baggage. "Forgetting the things that are behind, I press forward," were the words of a brave old man of the first century. The successful man forgets. He lets the dead past bury the dead. If anyone does him wrong, he considers the source and keeps sweet. It is only the small man that cherishes revenge. Be a good forgetter!

Miscellany

We see by the papers: that Norman Thomas and John L. Lewis have something in common. Vituperation is the word. Mr. Thomas, in case you've forgotten, is the gentleman whose genteel socialism wins for him every year the increasingly greater devotion of an increasingly smaller number of followers. John L., who dominated the CIO before the last election, has retired to the Presidency of the United Mine Workers. From this citadel he has launched a crusade ostensibly designed to bring about social justice but which seems to have degenerated into a campaign for disunity, chaos and atavism . . . that the cost of the world war is variously estimated at from 300 to 500 billions of dollars. At that rate the expenditure would have been sufficient to have supplied every family in the United States, Canada, England, France, Germany, Russia, Belgium and Australia with a $2,500 home on a $500 lot with $1,000 worth of furniture, a $5,000,000 library in every community of 200,000 in those countries and a $10,000,000 university . . . that a Chicago pediatrician recently received a phone call in the middle of the night from a family who were vacationing in Northern Minnesota. It seems that the youngest son had a high fever and was having a great deal of difficulty swallowing. This description left the physician rather in the dark. But, ex-

pense being no item, he chartered a plane for $300 and within 3 hours was at the patient's bedside. Smears showed an acute case of trench-mouth. So the child was bundled up and brought back to Chicago in the same plane. Which goes to prove what an insidious germ this Vincent's organism can be, a $300 germ in fact.

Verbigeration (continued)

The first thing on the docket, under this heading, is to endeavor to make amends to the new members of the membership committee. We are putting the blame squarely on the chairman for using last year's stationery; an old New England custom! The new members are: E. J. Rogers of Peoria, R. H. Bradley of Jacksonville, W. J. Gonwa of Chrisman, and Van Andrews of Cairo. Inasmuch as the remarks about the good work of the committee appeared under the heading of "Labor" we'll be on the spot again if they don't deliver the goods . . . Paul Clopper of Peoria, is now a full-fledged Colonel in the reserves and Stan LaDue of Chillicothe has been appointed regimental dental officer for the newly organized Illinois Reserve Guard. Others from the Peoria District on active duty are: J. L. Albaugh, Induction Center, Chicago; E. W. Bennett, Fitzsimmons General Hospital, Denver; J. F. Herman, Carlisle Barracks, Pennsylvania; Mark Baldwin and Louis Lynch, Chanute Field; and Harry Summer, Camp Davis, North Carolina. That's really spreading them out . . . Ned Arganbright, councilman from Freeport, is noted for his ability to remember stories of 'way back when. His masterpiece is the one about Archibald A. Holden . . . L. H. Jacob recently completed his new cabin down Peoria way, but it seems as though there is a bottleneck entrance to same, since some of his good friends have been unable to enter. They apparently don't know the password . . . Jesse Holden, veteran program chairman of the Quincy Study Club for twenty consecutive years, resigned only to be signed up by Art Glawe for the State Study Club Committee. You can't keep a good man down . . . The selection of John Green as Chairman of Local Arrangements for our annual meeting at Springfield next May is a popular one. We can be assured of a splendid meeting if Honest John has anything to do with it . . . Ross Vaughn of Monmouth is quite proud of the accomplishments of Willis Bray, President-elect of the Chicago Dental Society. Ross and Willis were classmates at St. Louis University . . . Lee McMillan, councilman from Danville, recently purchased a new mashie niblick for his six months' old son, John William. Lee is getting an early start on the youngster's golf preparatory to the state dental tournament in 1965.

Quotes

Quality is not attained by accident but is the result of high intentions and sincere effort.

If there ever was any true communism in the world it is gone now and left no address.

The clues to the treasure-house of life are to be found not outside but inside ourselves.

If most people realized that the things which made them popular with their own families contain the elements of greatness, there would be more greatness in the world. The principle is obscured because, by that time, the family is inclined to take them down a peg.

The acme of optimism is that of the man of seventy-eight who married a widow of seventy-five and then built their new home hard by a school house.

When it formerly took one man to do a job, it now takes two WPA'ers; one to dilly and the other to dally. This brings to mind the story of the WPA worker who was seen fast asleep in an oak tree forty-five feet from the ground. When a passerby asked, "How come?" he was told that the man went to sleep on an acorn.—*James H. Keith.*

THE NOTEBOOK

Action of Aspirin on Teeth:—Dott found that strong solutions of acetylsalicylic acid extract calcium from teeth. His observations leading to this observation were as follows: He dissolved 5 grains (0.32 Gm.) of acetylsalicylic acid in 1 ounce of distilled water at about 140 F. The solution was poured on four teeth in a 2 ounce bottle. This was gently rotated and the solution was quickly filtered after five minutes, and then ammonia and ammonium oxalate were added. There was an immediate white cloudiness soon settling as a definite precipitate. The teeth used appeared normal and free from carious matter. The experiment was repeated and the solution was left in contact with the teeth for ninety minutes before filtering and precipitating. The washed oxalate was dried and strongly ignited in a porcelain crucible, and the resulting calcium oxide weighed 0.011 Gm. (0.17 grain). In several other experiments it was found that the loss of weight of the teeth after the action of acetylsalicylic acid was much greater than the weight of calcium oxide obtained. By dissolving equal weights of acetylsalicylic acid and sodium bicarbonate, one obtains a faintly alkaline solution which has no appreciable action on teeth. The author points out that the question as to how far these facts should limit the use of acetylsalicylic acid as a mouth wash is for medical decision.—Dott, D. B. Action of Acetylsalicylic Acid on Teeth. *Edinburgh Med. J.* 47:700 (Oct.) 1940 Via *J.A.M.A. 115:2223* (Dec. 21) 1940.

Circumventing Our Conflicts:—It may be profitable to examine briefly a few of the devices we tend to employ for the purpose of circumventing our conflicts. . . . Projection is a psychological expedient that seeks to circumvent the hard realities of our conflicts by shifting the blame we should accept ourselves upon others or upon the conditions of life. Projection is common, and in its milder exhibitions it is harmless enough. For instance, the batter strikes out, throws down his bat, and says that the umpire needs glasses; the college girl says that the professor must have looked over the papers very hastily or she would have been credited with a perfect paper; the housewife complains that the baking powder was inferior in quality or the biscuits would have risen. But if practiced too frequently and with too much facility, projection readily becomes a grave menace to the integrity of the personality and the peace of the mind. Soon it erects an impassable barrier between the individual and the possibility of seeing himself as he really is. The descent may be very rapid—excessive criticism, pessimism, sarcasm, cynicism, prejudice, intolerance, hatreds, brooding. And from here it is not a very long step into the territory of mental disease—ideas of reference, hallucinations, delusions of persecution.—Strecker, Edward A., The Man and the Mob, *Mental Hygiene* 24:529 (Oct.) 1940.

Calcium in the Teeth:—The process of calcification in dentin and cementum is apparently quite similar to that in bone. Enamel may differ in some respects, for its formation is not analogous to that of bone. However, the basic crystalline patterns of all calcified dental tissues and bone are all those of a hydroxyapatite. The calcium content of enamel is about 34.5 to 37.1 per cent and that of dentin is about 33.0 to 35.4 per cent. Once the calcified tissues of teeth are formed they become quite stable. Unlike bone there is normally no decalcification and recalcification, only small amounts of new substance being added by formation of secondary dentin and cementum and by dentinal sclerosis. The enamel does not even participate in this slight additive process and, unlike bone, none of the calcified dental tissues is subject to calcium withdrawal nor influenced by general metabolic processes. The mistake of calling *both* teeth and bone storehouses of calcium is often made. It is true that bone may act as a storage depot but any calcium stored in teeth is not subject to withdrawal for general systemic use. If teeth are considered as banks for deposit of calcium, then they are certainly unusual banks—with receiving tellers but no paying tellers.—Robinson, H. B. G. Calcium Metabolism, Diet and Dental Caries. *J. Missouri D. A.* 21:168 (Sept.) 1941.

Calcium Withdrawal:—There is no evidence to show that calcium can be withdrawn from teeth to replace calcium elsewhere in the body or as a loan against reduced calcium intake. The only possible exception is in cases of resorption of dentin or cementum in connective tissue. Failure to recognize this basic principle of calcium hoarding by the dental tissues has led to much distortion of fact by physicians, dentists, and other health service workers. Again and again the teeth are classed with bone as storehouses of calcium. It is true that bone and teeth are similar in the chemical and crystalline composition and probably calcify by identical processes, but the teeth do not give up their calcium as do the calcium-liberal bones.

Pregnancy has been regarded as a condition during which calcium is readily withdrawn from the teeth and bones. Again, this is true for bone tissue but not for calcified tooth structure.—Robinson, H. B. G. Calcium Metabolism, Diet and Dental Caries. *J. Missouri D. A.* 21:170 (Sept.) 1941.

Osteo-Arthritis Deformans: — Microscopic investigation gives evidence of only two types of arthritis, namely, an infectious inflammatory type and a chronic, proliferative, noninfectious inflammatory type. Osteo-arthritis deformans is of the chronic proliferative, noninflammatory type which leads to progressive mutilation of the joint.

Disturbances in the joints are caused by altered function of the joint, injury of any type which decreases the elasticity of the articular cartilage, mechanical trauma, and abnormal intensive use, or the wear and tear of advanced age.

The resultant lesion is a loss of elasticity of the cartilage which allows subchondral bone destruction and a proliferation of fibrous tissue into the damaged cartilage. The proliferated tissue undergoes ossification producing marginal exostosis. The marginal exostosis is the most characteristic feature of osteoarthritis deformans.

The normal relations of the temporomandibular joint articulation are determined and maintained by the harmonic balance of the teeth in normal occlusion. The loss of lateral teeth produces a change in the location of the condyle. Loss of all teeth produces more severe changes.

Microscopic study of 37 temporomandibular joints from cadavers ranging in age from 3 months to 68 years and varying from full normal occlusion to complete edentulism, revealed structural changes in the condyle, the disk, the articular tubercle, and mandibular fossa. These microscopic findings demonstrate that abnormal functional stresses, applied to the temporomandibular joint under certain anatomical or constitutional conditions, may lead to the characteristic changes of osteoarthritis deformans. The degree of alteration varied with age and was more intense where there was a partial or total loss of teeth.—Bauer, Wm. H. Osteo-arthritis of the Temporomandibular Joint. *Am. J. Path.* 17:129, 1940, Via *J. Mich. S. D. Soc.* 23:191 (August) 1941.

Dental Caries in Rural Children: — The connection between dental caries in children and the reduced cutaneous production of vitamin D from solar radiation due to climatic factors has been studied by East and Kaiser.[1] They took into consideration the mean number of hours of sunshine annually, the latitude and the mean winter temperature. Next they selected the caries rates for white children residing in three hundred and fifty-eight rural or semirural counties of twenty-four states of the United States as determined by data collected under the direction of the American Dental Association and the United States Public Health Service.[2] The survey comprised 581,708 children about equally divided according to sex and classified in age groups of 6 to 8, 9 to 11 and 12 to 14 years. Rural children were selected because of the greater uniformity in ethnology, food, housing and living conditions and in the amount of dust and smoke in the air. The study was restricted to white children to exclude, as far as possible, the variable which skin pigmentation might introduce. Only caries in permanent teeth was considered. The data for the mean number of annual hours of sunshine in the various counties and for the mean winter temperature were taken from records of the United States Weather Bureau. Of the three hundred and fifty-eight counties one hundred and ninety had more and one hundred and sixty-eight had fewer than two thousand six hundred hours of sunshine annually. Groups living in counties where most sunshine prevailed had in every instance the lowest rates for caries. One hundred and thirty-four counties had a mean winter temperature higher and two hundred and twenty-four a mean temperature lower than 30 F. Groups living in zones in which the mean winter temperature was below 30 F. had higher rates for caries than those who lived where the mean temperature was higher. One hundred and sixty-nine counties were north and one hundred and eighty-nine were south of latitude 40 north. In every instance the children living in the northern zone had a higher mean rate for caries. To determine the degree of relation between the caries rates and the three climatic factors of sunshine, latitude and winter temperature, the correlation coefficients of all possible combinations were computed by means of the partial regression equation,[3] an intricate statistical formula, and the results are tabulated by the authors. The lowest values in their sunshine series indicated that each additional hundred hours of sunshine was associated with a decrease of 3.92 ± 0.8 and 4.7 ± 1 per cent from the mean rates of caries in the permanent teeth of boys and girls, respectively, in the 9 to 11 year groups. The highest values were in the 6 to 8 year groups, which showed respective decreases of 7.4 ± 1 and 6.3 ± 1.6. The values for the 12 to 14 year groups were intermediate. In their latitude series each increase of 1 degree of latitude was accompanied with a percentage increase of 2.7 ± 1.3 in the caries rates for boys of 6 to 8 years. In girls of the same age the increase of the mean rate was 1.1 ± 1.2 per cent. The other

age groups showed important and statistically significant percentage increases. The lowest value for the groups of 9 to 11 and 12 to 14 years was 4.1 ± 1.1 per cent for each degree of latitude. In the evaluation of the relation of winter temperature to caries rates it was found, after the overlapping influences of sunshine and latitude had been eliminated, that winter temperature exerted little effect on the caries rates where boys were concerned and on those for girls in the age groups from 9 to 11. This study, accordingly, confirms previous evidence that a significant relation seems to exist between the incidence of dental caries and the amount of sunshine and the latitude. Winter temperature was an important climatic factor only for girls in the age groups of 6 to 8 and 12 to 14 years. This difference in incidence, the authors speculate, may be due to the fact that the youngest girls are kept indoors in cold weather while boys of the same age are not. Similarly, rural girls between 12 and 14 years may have indoor duties while boys of the same age find their recreation and tasks outdoors. The results of this study of environmental factors in relation to dental caries, they say, are in accord with those obtained in controlled vitamin D therapy experiments and in artificial ultraviolet irradiation. — Dental Caries in Rural Children. *J.A.M.A.* 117:536 (Aug. 16) 1941.

Recurrent Aphthae:—In 2 cases of recurrent, scarring aphthae, sulfathiazole was beneficial in relieving soreness of the lesions and promoting prompt healing. Sulfathiazole did not prevent recurrences, however, but it gave comparable relief a second time. A large dose works better than a small one.—Sutton, R. L. Recurrent Scarring Painful Aphthae. *J.A.M.A.* 117:175 (July 19) 1941.

Cancer of Lip:—Three hundred and eighteen patients with cancer of the lower lip were treated by roentgen rays and radium. Twenty-two have died or now have incurable metastases (7 per cent). There was a 72.2 per cent five year survival rate.

Protracted radium therapy with the element well filtered has produced a higher percentage of cures than did the older technic, which employed weaker doses at short intervals.

Results obtained by interstitial radiation therapy in a restricted number of patients surviving five years or more revealed 95 per cent evidence of cure of the primary lesion. In a much larger number of cases of less than five years' standing, there is every indication of an equally good outcome.—Lamb, J. H. and Eastland, W. E. Cancer of the Lower Lip. *J.A.M.A.* 117:600 (Aug. 23) 1941.

Prevention of Bismuth Gingivitis.—Felsher and Jones found that sodium hexametaphosphate in a fine powder eliminates oral uncleanliness, tartar on enamel, carious teeth and roots and oral foci of infection responsible for the bluish pigmentation of the gums or more serious mucous membrane lesions of patients receiving bismuth therapy. Fifteen parts of it to eighty-five parts of talc was used on a tooth brush, and this was found to remove calcereous deposits, tartar and food deposits from teeth and gums, preventing formation of mucous plaques. It is not injurious to tissues. Patients in the syphilis clinic were instructed to use it as a tooth powder on a brush after each meal and at bed time. Of 150 patients under treatment during 1938 and 1939, 100 showed some oral manifestations attributable to bismuth. The use of this powder reduced noticeably the incidence and severity of bismuth reactions in the oral cavity. In 8 of the patients bismuth therapy was suspended or reduced because of rapidly progressive lesions of the buccal cavity. After from two to six weeks of using the powder, 6 of the patients were put on full doses of bismuth. In 1 patient with extensive foci of infection the powder failed to check a rapidly developing bismuth pigmentation accompanied by a severe ulcerative stomatitis. In six months, during which time use of the powder was persisted in and the patient received proper dental treatment, general tonics and no antisyphilitic therapy, full recovery was made with freedom from lesions or pigmentation in the mouth. A course of mapharsen and a course of bismuth in half doses given since has not been followed by signs of intolerance. The remaining patient of the group was a young woman receiving antisyphilitic treatment in the third trimester of pregnancy. After the first injection of bismuth a severe stomatitis and gingivitis followed. Several carious teeth with irritated alveolar processes were found. Previous mild caries was augmented by the decalcification process during pregnancy. The patient was given the powder to cleanse the mouth, and mapharsen was substituted for bismuth. In a few weeks the lesions in the mouth healed. The patient continued with arsenical injections to the end of her term. The results are inconclusive, as bismuth therapy was not resumed and its suspension was probably sufficient cause for recovery. Sodium hexametaphosphate did not intensify tooth decay. Four patients who retained an intolerance to bismuth, even after proper dental care, and who before they began to use the powder

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[1] East, Bion R., and Kaiser, Hilda: Relation of Dental Caries in Rural Children to Sex, Age and Environment, Am. J. Dis. Child. 60:1289 (Dec.) 1940.

[2] Messner, C. T.; Gafafer, W. M.; Cady, F. C., and Dean, H. T.: Dental Survey of School Children, Ages 6 to 14 Years, Made in 1933-1934 in Twenty-Six States, Pub. Health Bull. 226, U. S. P. H. S., 1936.

[3] Fisher, R. A.: Statistical Methods for Research Workers, London, Oliver & Boyd, 1936.

were never able to finish a course of bismuth therapy because of heavy oral pigmentation or gingivitis and stomatitis, have all since the use of the metaphosphate powder been able to finish two or three full courses of bismuth with only mild reactions. Eight patients with definite indications for dental treatment, before antisyphilitic therapy was begun, were given the powder immediately after the examination, and in from one to three weeks they were able to begin bismuth injections while they were still receiving dental care. Inspection of the oral cavity during and after the bismuth course revealed only faint deposits on the gums. Of the 80 remaining patients some showed different degrees of pigmentation of the gums, others complained of a soreness of the gums, and the oral hygiene of others was poor. All these patients using the powder continued with their bismuth and arsenical therapy, and the pigmentation of some became fainter despite continued treatment, while in others the lesions did not progress. About one half of the patients who complained of soreness of the gums or mouth were relieved after using the powder. There was a definite improvement of the mouth hygiene in all those who had oral lesions.—Felsher, I. M. and Jones, K. K. Prevention of Bismuth Gingivitis. *J. Investigative Dermat.* 4:135 (April) 1941 Via *J.A.M.A.* 117:227 (July 19) 1941.

Calcium Metabolism:—Changes in calcium metabolism may lead to modification in structure of the developing tooth, but the fully formed tooth is not subject to change with disturbances in systemic calcium balance. The teeth are not storehouses of calcium and do not give up their calcium during general metabolic disturbances as do the bones. Pregnancy, per se, is not a cause of dental caries.

The addition of calcium to the diet to increase calcification of teeth is not justified. There is no evidence that calcium can be earmarked for the teeth, so calcium therapy should be considered a general health problem.

The need for reduced refined carbohydrate consumption is apparent and suggests one way to reduce, in some degree, the appalling incidence of dental caries.

No vitamin has yet been discovered that can replace metals or plastics as filling material for the tooth already attacked by caries. American dentists must not only continue to lead the search for a caries preventive but must also replace teeth to serviceable condition by application of the available operative procedures.—Robinson, H. B. G. Calcium Metabolism, Diet and Dental Caries. *J. Missouri D. A.* 21:177 (Sept.) 1941.

Sedimentation Rate:—1. What is the significance of a change from normal in sedimentation rate in the blood of an adult? 2. What effect does an acute suppurative process such as an acute abscess have on the sedimentation rate? 3. What effect does a chronic infective process such as chronic tonsillitis or abscessed teeth have on the sedimentation rate?

1. An increase in the sedimentation rate of red blood cells is usually correlated with an abnormal increase in the concentration of globulins of the blood plasma, especially plasma fibrinogen. An abnormal elevation in the concentration of plasma fibrinogen and in the sedimentation rate is one of the most frequent responses of the body to a variety of noxious stimuli such as tissue inflammation or destruction, whether traumatic, chemical, bacterial or neoplastic. It may be increased after the injection of foreign protein, small doses of liver poisons and damage from roentgen rays. Physiologically, fibrinogen production is increased in normal pregnancy. Occasionally the sedimentation rate is increased above normal associated with an elevation of the concentration of serum globulins in such diseases as cirrhosis of the liver, multiple myeloma and chronic infection. An abnormally slow sedimentation rate is not a satisfactory measure of plasma proteins and can be interpreted only as compatible with normal. For a more complete discussion of the subject, see Ham, T. H., and Curtis, F. C.: *Medicine* 17:413 and 447 (Dec.) 1938.

2. An acute suppurative process usually produces an elevation in the sedimentation rate and in the plasma fibrinogen level after the third or fourth day, especially if there are generalized manifestations from the abscess. A localized abscess may not increase the sedimentation rate.

3. In general, chronic inflammatory processes such as chronic tonsillitis or abscessed teeth do not produce an elevation of the sedimentation rate. So-called focal infections influence the sedimentation rate more or less in proportion to the nature and severity of the pathologic process. Chronic localized infections may have no influence, whereas chronic infections characterized by exudative inflammation such as pelvic inflammatory disease, tuberculosis and chronic bronchitis may cause significant increase in both plasma fibrinogen and the sedimentation rate. For further details, see Wintrobe, M. M.: *M. Clin. North America* 21:1537 (Sept.) 1937. Queries and Minor Notes. *J.A.M.A.* 117:578 (Aug. 16) 1941.

THE CONTEMPORARY SCENE

The silly season, according to tradition and present evidence, is in full glory. Traditionally, the silly season is that time "in Great Britain—the months of August and September—when, owing to the recess of Parliament and to other prominent persons' being on holiday, there is a shortage of important news, the lack being supplied by trivialities." There is considerable weight in favor of the argument that we also enjoy a silly season and for evidence we offer three examples takes from less than a week's summer reading.

"MISS MOLAR"

On the back page of a newspaper, whose opinion of itself, incidentally, is vastly better than that held by a majority of its readers, we found a large picture of a beaming female who had been chosen as "Miss Molar" by a dental society. The average reader will guess that the picture could originate only in one state—California. It did.

As a reformed press agent, this commentator knows that unfortunate publicity sometimes escapes even the most rigid restrictions. It is not likely, however, that "Miss Molar" could have been crowned *(pun)* without the tacit consent of those in charge of the meeting. In either case, the resulting publicity sums up to something considerably less than desirable.

The choice of a pretty maiden as "Queen of the Rutabaga Carnival" or as "Miss Finnan Haddie of 1941," is an old and transparent device of the press agent to secure publicity for an event not worth an honest stick of type in its own right as news. The newspaper gets a picture known to everybody but the Rover boys as "leg art," the press agent gets some notoriety for his client, and the reader—well, you know what the reader gets.

AZALEA QUEEN

This commentator, for one, is tired of seeing females adorned with grapes, peaches, smelt, azaleas and sundry products of field and stream to advertise certain, very minor contributions to civilized life. He is also tired of seeing pictures of "Miss Perfect Back," "Miss Little Rock," "Miss Genuine Complexion" and, for that matter, is already heartily tired of beautiful "Miss Molar."

Publicity has its legitimate uses. A considerable amount of sound dental health education has been accomplished through the use of that medium. The standing of the dental profession as an authentic health service has been notably advanced through an increasing public appreciation gained largely through proper publicity. It does not seem to us that the selection of "Miss Molar" by a dental society falls in either of those categories. It approaches more closely such promotions as "Buy Fido a Rubber Bone Week." These slick tricks of salesmanship may help sell a vast quantity of Grade B movies, but we doubt that they help the standing of dentistry as a scientific profession.

The second bit of evidence that this is the silly season deals, not at all strangely,

with publicity sent out by a motion picture press agent. This piece, in a movie magazine, had this to say about that great humanitarian, Dr. Kildare:

> Having been a medicine man in six Kildare pictures, you can bet your bottom dollar that Ayres hasn't been asleep on the job. He has read the materia medica twice through, has romped through a library of surgery, and when last heard from was mastering the latest whimsies of the art of diagnosis. One of the Hollywood legends is that once Dr. Lew walked up to a total stranger, talked to him five minutes and informed him gently that he was suffering from a brain tumor. His hunch proved right.
>
> So studious is Ayres about his role of James Kildare, M.D., that he has haunted hospitals to check up on physician's habits, has talked with internes until wee hours in the morning, has watched operations by the dozen and has even compared his bedside manner with those of established practitioners.

So help us, Hannah, as an example of imperishable and unexampled drivel those two paragraphs will take some beating. If "Dr. Lew" ever walked up to us and started to diagnose our tumors—even if he did it gently—we should make him eat the full two volumes of the materia medica from acetone to zinc oxide, being very careful not to skip the choicer dainties in the middle pages.

SOPORIFIC

We saw five minutes of a Dr. Kildare movie once by mistake and we thought there was no finer argument in favor of socialized medicine. Even if Dr. Lew has a diploma from Famous-International Pictures we wouldn't want to have him around while we ached somewhere. As for the Kildare picture, the acting was sterile, the story, soporific and the general scientific tone, emetic. All of which, we might add, is exactly the note struck by Dr. Lew's press agent.

The third example of the silly season fights with the other two for recognition. It is from an informal little article in which a dentist recounts somewhat modestly the numerous times he has appeared on society programs during the past year.

> Saying "yes" to every invitation is no sure sign of weakness, because the "yes man" chap is no worse than the habitual "no sir" kind. I am not aiming to brag but to inspire those having something good without an opportunity to exploit it. During 1940 I appeared in twenty-one states, thirty-eight times . . .
>
> I tumbled how to get press recognition. Lay readers don't crave reading about instrument No. 48, or boxed or sliced cavities. They want language. So I penned a chatter story to fit lay appeal. The ————*News* gave me a whole column. There's a subtle way of blowing your own horn so folks don't know where so much wind comes from . . .
>
> I still use Hartman's psychologic panacea on teeth sure not to be sore anyway. Confidence bountifully abounds in the mere smell of ether.

More of same bountifully abounds. It is penned in silly chatter that reveals the author's words as naked of sense as a man's knee is of complexion. There may be a "subtle way of blowing your own horn so folks don't know where so much wind comes from," but this isn't it. Nobody ever stood in a southwest breeze in Chicago on a sultry, summer night years ago without knowing what was happening to him. You see it isn't the direction of the wind that counts so much, it's what the wind brings.

If all of these samples are evidences of the silly season—that is bad enough. If they represent definite and permanent levels of journalism—dental or otherwise—that is worse. In either case, it is time that more people developed a greater sense of responsibility to the printed page.—*h.*

OBITUARY

RICHARD W. McLEAN
1893-1941

Dr. Richard W. McLean, former member of the Executive Council from the Central District, died suddenly on August 14 at his home in Bloomington. Death was attributed to heart failure although Dr. McLean had been active in practice until a few days previous.

Dr. McLean was a graduate of Chicago College of Dental Surgery, class of 1917, and held membership in the state society through the McLean County component from 1920 to the present. He was serving as a representative from the Central District on the Public Welfare Committee at the time of his death. He served as a member of the Executive Council of the state society for the Central District from 1936-1938.

Dr. McLean was born in Princeton, Illinois, in 1893. He served in the medical corps with the infantry branch of the army during the world war and attained the rank of captain during his service in France. He came to Bloomington in 1920. Two years later he was married to Nan Scroggin, of Lexington, who survives him with one daughter, Martha.

For many years Dr. McLean had been active in the affairs of the Rotary Club and was chosen as secretary for this year. He was particularly active in benefit parties given by the organization during the Christmas season. He was a member of the Second Presbyterian Church and served as trustee for several years. At the annual meeting in April he was chosen as moderator of the congregation. In addition to his activities in dental organizations, he served on many committees and boards of civic and fraternal organizations.

E. M. ARNOLD
1876-1941

Dr. E. M. Arnold, Decatur, was born in Lintner, Illinois in 1876 and died of a heart attack in his office on July 22, 1941. After preliminary education in the town of his birth he attended the Central Normal School at Danville. In 1904 he was graduated from the College of Dentistry, University of Illinois. For a short time he practiced in Cerro Gordo and then began his twenty-six years of dental practice in Decatur.

Dr. Arnold is survived by his widow, four children and ten grandchildren. He was an active member of the Church of the Brethren and served it in various official and teaching capacities.

Dr Arnold was a valued member of his dental society for the past quarter century. He was in constant attendance at meetings of the state and local societies. He was a good friend, a conscientious dentist and a highly esteemed influence in his profession and his community.—*J. F. F. Waltz.*

W. A. ALEXANDER
1864-1941

Dr. William Alva Alexander was born on October 13, 1864, in Litchfield, Illinois, and died suddenly of heart disease in his apartment on July 24, 1941. Funeral services were held at Carlinville on July 27 at the Methodist church. Interment was made in the city cemetery.

Dr. Alexander was graduated from Valparaiso University in 1886 and for the next two years practiced in Litchfield. He later established an office in Springfield and, after remaining there for one year, moved to Carlinville where he was in practice until the time of his death.

For many years Dr. Alexander had had a deep interest in anesthetics and in

denture prosthesis. He appeared on many programs to lecture on these subjects. He was also an active member of the Methodist church and of the Masonic order.

Surviving Dr. Alexander are his daughter, Melba, and a son, Wayland, three grandchildren and two sisters.

ERNEST PFENNIG
1866-1941

Dr. Ernst Pfennig, of Chicago, died on June 28 at the age of 75 after ill health of long standing. He retired from active practice in 1932 after more than forty years of dental practice.

Dr. Pfennig was born in Obhausen, Germany, on January 5, 1866 and came to the United States at the age of 14. In 1888 he was graduated from Northwestern University Dental School.

He was a Life Member of the Illinois State Dental Society, a member of the American Dental Association and of the Chicago Dental Society. He was also a thirty-second degree Mason, a Shriner and a member of the German Club of Chicago.

Funeral services were held on July 1 with interment in Rosehill. Dr. Pfennig is survived by his widow and one daughter.

EDWARD N. HAHN
1886-1941

Dr. Edward N. Hahn, who was born on April 3, 1886, in St. Paul, Nebraska, died suddenly in his office in Chicago while working on a patient. He was a graduated of the Chicago College of Dental Surgery, class of 1918. He was a member of the Illinois State Dental Society, the American Dental Association and of the North Side Branch of the Chicago Dental Society.

He is survived by his widow, one daughter, three sisters and a brother.

CARL W. HARMKE
1903-1941

Dr. Carl W. Harmke, of Chicago, died suddenly on July 6 while vacationing near Paynesville, Minnesota. He was born in Chicago on March 9, 1903, and was graduated from Northwestern University Dental School in 1924. He was a member of the Illinois State Dental Society, the American Dental Association and the North Side Branch of the Chicago Dental Society.

He is survived by his widow and two children.

ARTHUR W. MANGOLD
1900-1941

Dr. Arthur W. Mangold, of Chicago, was born on June 7, 1900. With his wife he was killed in an automobile accident on July 2 while starting a vacation trip. He was forty-one years old.

Dr. Mangold was graduated from the Chicago College of Dental Surgery, Dental School of Loyola University, in 1929. He was a member of the Illinois State Dental Society, the American Dental Association, and of the West Suburban Branch of the Chicago Dental Society. He is survived by his mother and father.

F. C. BEHRENS
1879-1941

Dr. F. C. Behrens, of Gillespie, was born in 1879 in Gillespie. He was graduated in 1901 from the School of Dentistry, Washington University, which at that time was known as the Missouri Dental College. He practiced for one year in St. Louis and, in 1906, returned to Gillespie where he practiced until the time of his death.

In 1906 he married Stella Hoppe, of Alton, who survives him with two sons who are both dentists, Dr. Carl W., of Bunker Hill, and Dr. F. A. Behrens, of Gillespie.

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T. L. Gilmer	T. J. Ownby *Mendon*	Leroy M. Wolfe *Quincy*	H. M. Tarpley *Quincy*	1st Tuesday and Wednesday in November.
Kankakee	J. A. Zwisler *Kankakee*	W. J. Cunningham *Kankakee*	M. L. Baker *Kankakee*	3rd Thursday in March and September.
Knox	Walter Pacey *Galesburg*	R. M. Way *Galesburg*	M. W. Olson *Galesburg*	1st Thursday in each month except June, July and August.
La Salle	A. L. Roberts *Streator*	V. J. Piscitelle *LaSalle*	W. G. Metcalf *Streator*	April and October.
McLean	A. A. Johnson *Minonk*	Carl L. Green *Bloomington*	T. A. Rost *Bloomington*	1st Monday in each month, October to April inclusive.
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Northwest	C. L. Snyder *Freeport*	Peter Griffo *Freeport*	C. L. Snyder *Freeport*	2nd Monday of each month, September to May.
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Southern Illinois	H. M. Fry *Sesser*	W. G. McCall *Metropolis*	W. E. Wagner *Ava*	Semi-annual—March and October.
Wabash River	C. L. Jordan *Olney*	H. W. Kinney *Robinson*	E. N. Henderson *Albion*	Annual — Second Wednesday in October.
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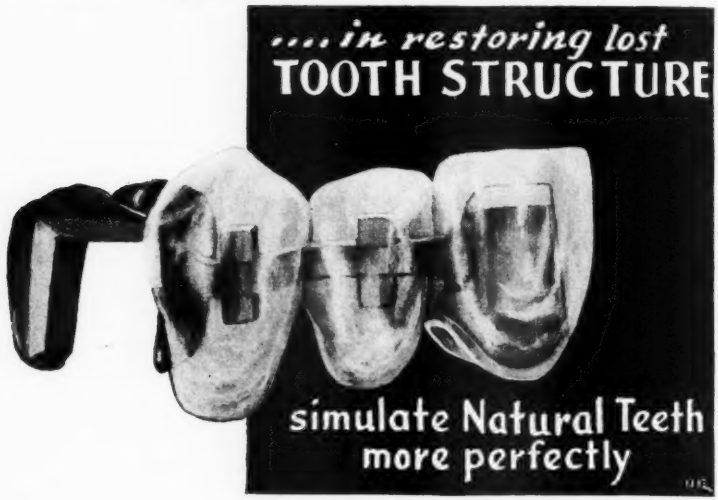

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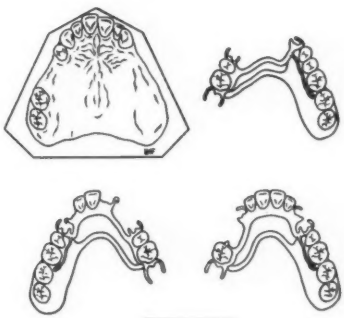

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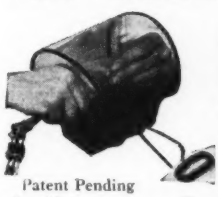

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